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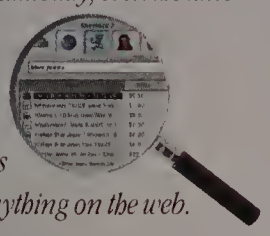


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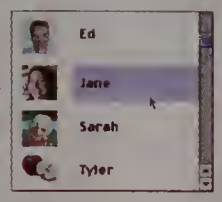
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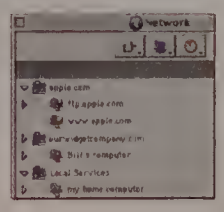
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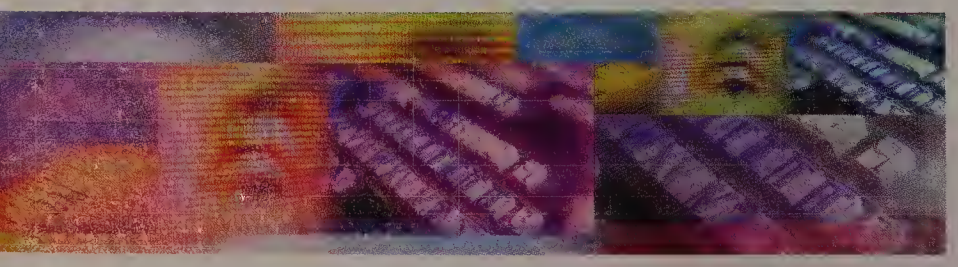
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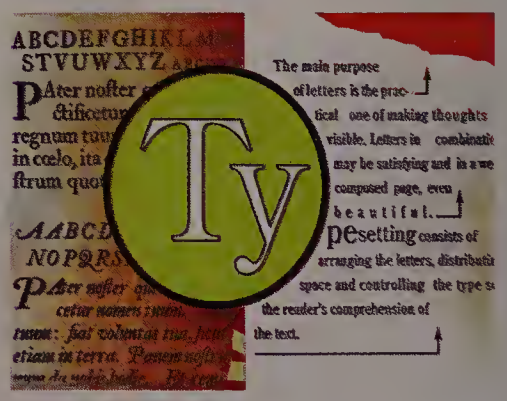
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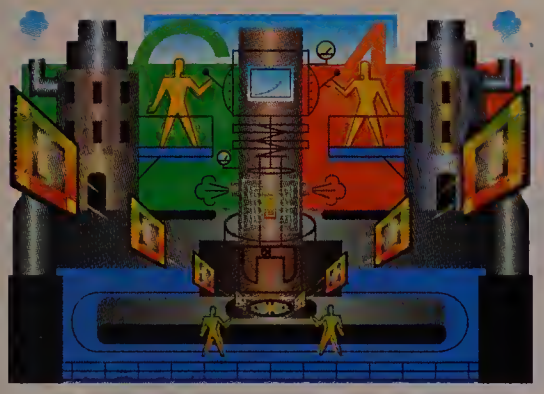
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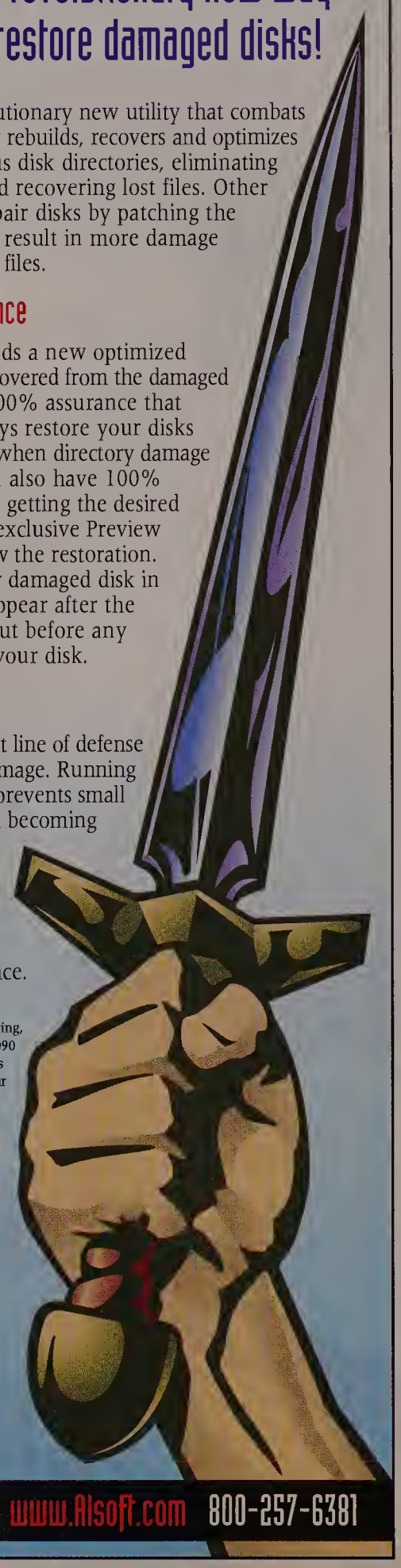
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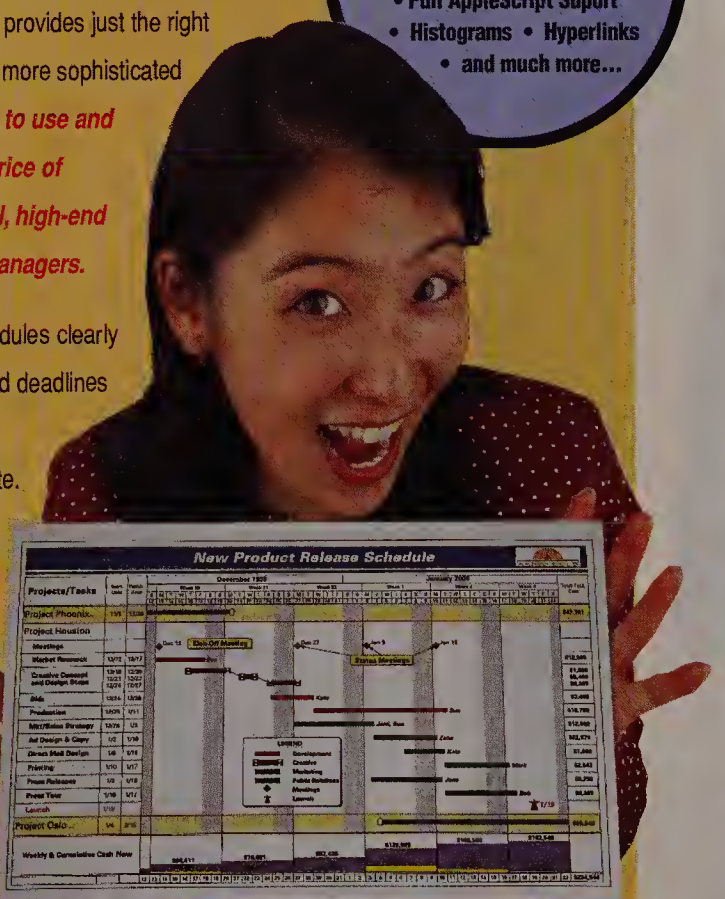
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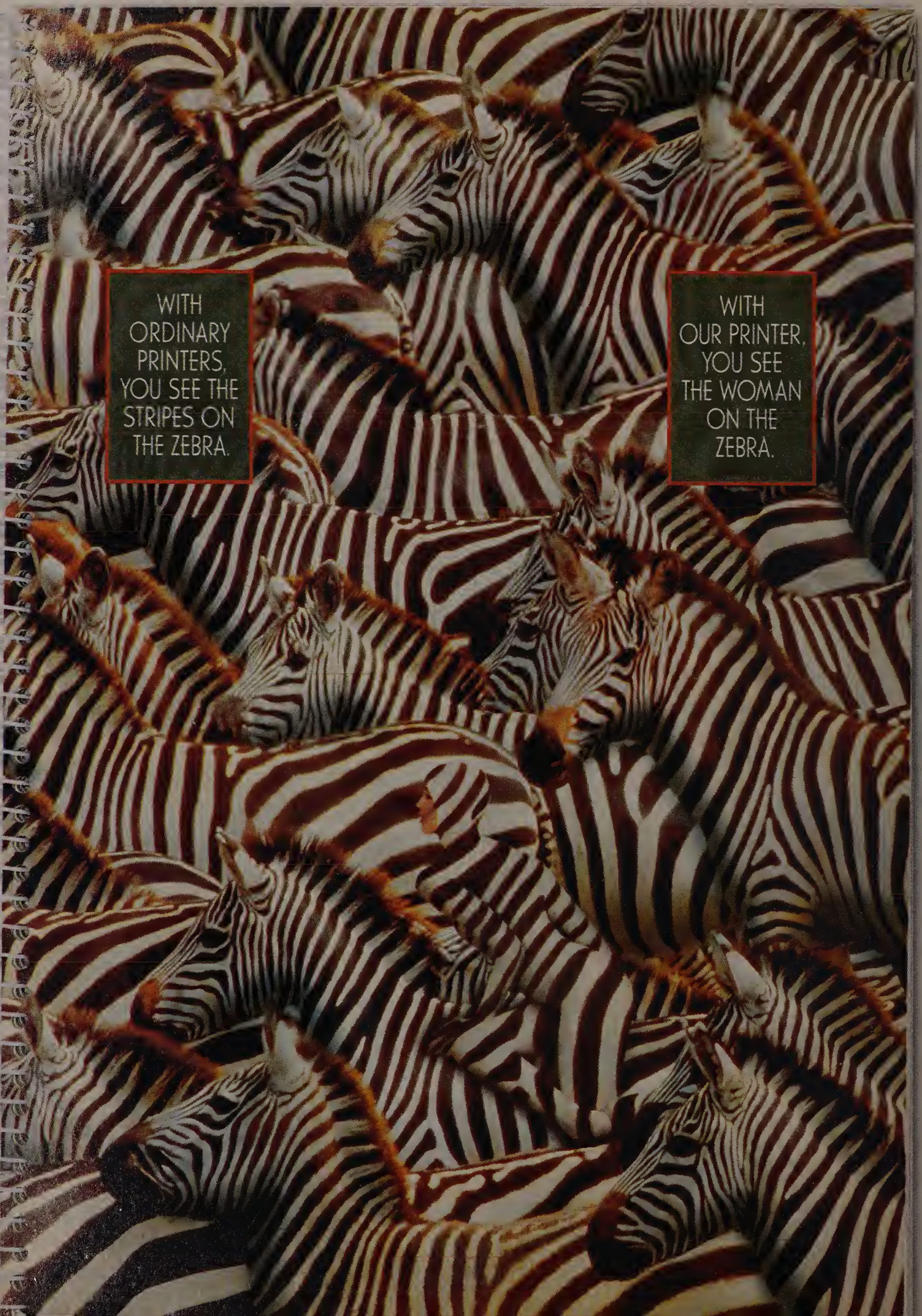


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Letters



Judging an iBook by Its Cover

AFTER READING "MEET THE iBook" (October 1999), I'm more convinced than ever that Apple's barrel is filling with rotten fruit. Don't get me wrong—as someone who's been a loyal Macintosh user since the 68020 days, I'm all in favor of customer-focused innovation. But that Fisher-Price look has got to go. I simply can't imagine walking into a business meeting carrying that thing. I can already hear them: "Where's your *real* computer?" or "What a nice purse you have."

And another thing: at almost 7 pounds, the iBook is going to be a ball and chain to lug around. I wouldn't carry it to my car, much less across campus or around the world. Since it lacks a touch screen, you can't even use it to copy your instructor's drawings or equations from the board. What good is that to a typical engineering, science, or business student? What Apple needs to design is a 2.5-pound cordovan lightning bolt that reads my mind and feels my pain.

SHERRELL R. GREENE
Knoxville, Tennessee

WHEN STEVE JOBS INTRODUCED the iMac, he called it "tomorrow's technology for $1,299." The iBook is yesterday's technology for $1,599. True, the iBook features much of the same technology as the iMac—but a year later, which makes it archaic by computing standards. The iBook falls behind current technology in terms of speed, weight, and graphics acceleration. Granted, these improved features could drive up the price and might be hard to add to a portable computer, but the ability to play video games and watch movies is more appropriate for a consumer-oriented system than for any other model. The one truly innovative feature of the iBook—the AirPort—really makes sense only in a classroom setting. Before the iMac, *consumer model* just meant "cheap." Steve Jobs changed all that when he introduced the iMac, which was a consumer model actually designed with specific features appealing to consumers. Now, with the iBook, we are back to the "cheap" definition of the term.

JACOB SPINDEL
Tualatin, Oregon

IN MY OPINION, ONE OF THE biggest advantages Wintel machines have over Macs is they start up faster. Though the G3 processor has helped some, the Mac is still sluggish. In "Meet the iBook," David Pogue discusses Apple's new Energy Saver control panel and its option to save current RAM contents. He says that this feature allows for much faster start-up and eliminates the "Welcome to Macintosh" logo and the extensions parade. It seems to me that this would benefit all Mac users, not just iBook users. So, is there any way that I can obtain a copy of the new Energy Saver control panel?

MICHAEL GNOZZIO
Flanders, New Jersey

Although we could debate which platform has the speediest start-up (there's no doubt that Windows-based machines take a lot longer than Macs to shut down), we agree wholeheartedly that the iBook's "hibernation" feature (Apple hates this term, by the way) would be an excellent addition to all Mac systems. Unfortunately, according to Apple, hibernation requires both special software and special hardware, and the hardware is currently available only on iBooks. So for now, we can only dream.—Ed.

Forty Bits Bites

APPLE'S NEW AIRPORT, WHICH received one of *Macworld*'s Best of Show awards at Macworld Expo in New York, uses 40-bit RC4-40 encryption for the transmission of data. This concerns me, because if I were to use a 128-bit-encryption browser for, say, online banking, the AirPort's 40-bit transmission becomes the weak link in the security chain and defeats any efforts to ensure strong security. By today's standards, 40-bit encryption is obsolete. It can be cracked by a good hacker in a matter of hours, or in seconds if intercepted by a more advanced organization. For my purposes, and for the purposes of anyone who wants to conduct truly secure online communications and commerce, this level of encryption is unacceptable.

JOE LEWIS
Walnut Creek, California

continues

19K A-OK

IN THE ARTICLE "01/01/00" (OCTOber 1999), Geoff Duncan says, "The original Mac development team chose midnight, January 1, 1904, as the start of the Mac calendar—in part because it's mathematically convenient to have a calendar system start on a leap year, which 1900 was not."

Am I missing something here? I learned in school that leap years occur every four years. I wasn't around in 1900, and maybe things were different back then, but if 1904 was a leap year, wasn't 1900 also a leap year?

WILLIAM W. BENNETT
Lewes, Delaware

We received several letters about this. Because Earth takes a little less than 365.25 days to orbit the Sun, every fourth year is a leap year, except years ending centuries, which are leap years only if they are also evenly divisible by 400. Therefore, 2000 will be a leap year, but 1900 wasn't and 2100 won't be.—Ed.

MIDI Me

IN HIS REVIEW OF QUICKTIME 4 Pro (*Reviews*, October 1999), Jim Heid left out any discussion of QuickTime musical instruments. If Apple wants QuickTime to be taken seriously as a MIDI program—and it should want that—it needs to release a version of QuickTime that won't delay when used in a MIDI setup. QuickTime has always delayed when being used by MIDI controllers or programs. There are too many PCs that can be used as sound modules for Apple to ignore this problem.

MICHAEL DODD
Cleveland, Tennessee

QUICKTIME 4 PRO IS A REAL WINner that deserves more than the 3.5-mouse rating it received in *Macworld*. For example, in the File menu of QuickTime Pro is the Present Movie command, which gives you the option of displaying full-screen movies. Yes, some clips look a tad grainy, but the *Star Wars* trailer looks brilliant in QuickTime Pro. And a two-minute trailer such as the one for *Shakespeare in Love* is only 5.8MB. That means a single CD can hold 100 minutes of full-screen video.

A. BRODY
Laurel, Maryland

I Want My ixTV!

JIM HEID ENDS HIS REVIEW OF XLR8's InterView video-capture card (*Reviews*, October 1999) by saying, "There's no cheaper way to get video into a USB-equipped Mac." That isn't totally true. I use IXMicro's ixTV, which fits into a PCI slot, captures video, and costs only $69. It includes a TV tuner in addition to its S-Video and RCA inputs, so you can capture live broadcasts or just watch TV in a window on your screen. And whereas VideoShop's Capture, bundled with the InterView, can capture video at a maximum resolution of only 320 by 240 pixels, the ixTV card can actually capture 640-by-480 video—a feature that allows full-screen playback. In my opinion, it's a much better product than the InterView, for a lower price.

BRIAN E. HANNON
Philadelphia, Pennsylvania

Shot Misses Mark

I READ WITH DISGUST CHRISTOpher Breen's anti-NRA comments in October 1999's *The Game Room*. It is disappointing that a magazine that professes to "think different" is so quick to jump on the politically correct—but highly misguided—NRA-bashing bandwagon. I do not look to my computer magazines for social and political commentary, especially when the commentary is so sadly lacking in thought and reason.

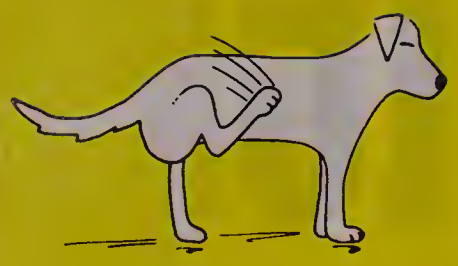
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ROCKY ANGELUCCI
Plano, Texas

Rock My World

DAVID POGUE OUTDID HIMSELF with his column "Steven Saves the Mac" (*The Desktop Critic*, October 1999). It's a masterpiece! Mac users are a unique bunch, possessed of an idealistic devotion to a computing paradigm that seems to go beyond its inherent technological superiority. We hoped for years that someone at the head of Apple would finally get it and realize that our fortunes lie with those who dare to "think different." Steve Jobs deserves all the credit he

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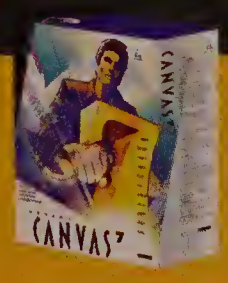
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gets, and so do you. Thank you for a witty rhyme that was straight from the heart. Your work has earned a place of honor framed on my wall!

JOHN TUSCH
Shelton, Connecticut

A Loan Survivor's Tale

APPLE HAS A STUDENT-LOAN PROgram that supposedly makes it easy for students to get the Macintosh products they need. The problem is that I don't know of any students who have actually qualified for these loans.

I'm not saying that these loans are never approved, but maybe Apple's standards are too high.

One person I know applied for an Apple loan to buy an iBook. The student's parent—who owns a home and makes well over the $15,000 minimum income—applied as a coborrower. The loan was rejected. My friend drove down to a local bank and applied for a bank loan with a slightly better interest rate. That loan was approved the next day.

Maybe Apple's loan program is more of a marketing scheme than an actual attempt to give poor students access to computers.

ROB ALINDER
Everett, Washington

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CORRECTIONS

The Mathematica Student Edition price was listed incorrectly as $79, which is the upgrade price (Reviews, *October 1999*). *The Student Edition is $139. And even though Mathematica can read MAT data files, it cannot convert MATLAB M-files to Mathematica notebooks as we stated.*

The update to MacLinkPlus Deluxe 10.1 costs $40, contrary to our assertion in the sidebar "Proceed with Caution" in "01/01/00" (October 1999). *The latest Y2K update for FileMaker Pro is 4.1v3, not 4.1v2.* m

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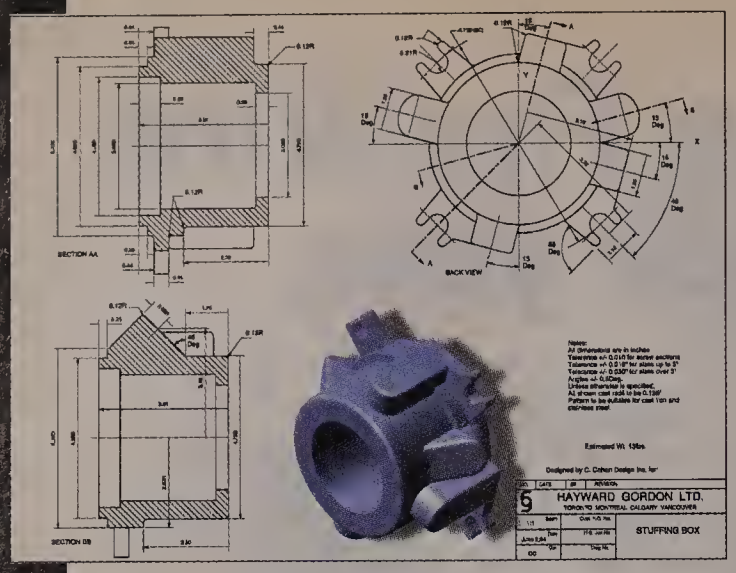
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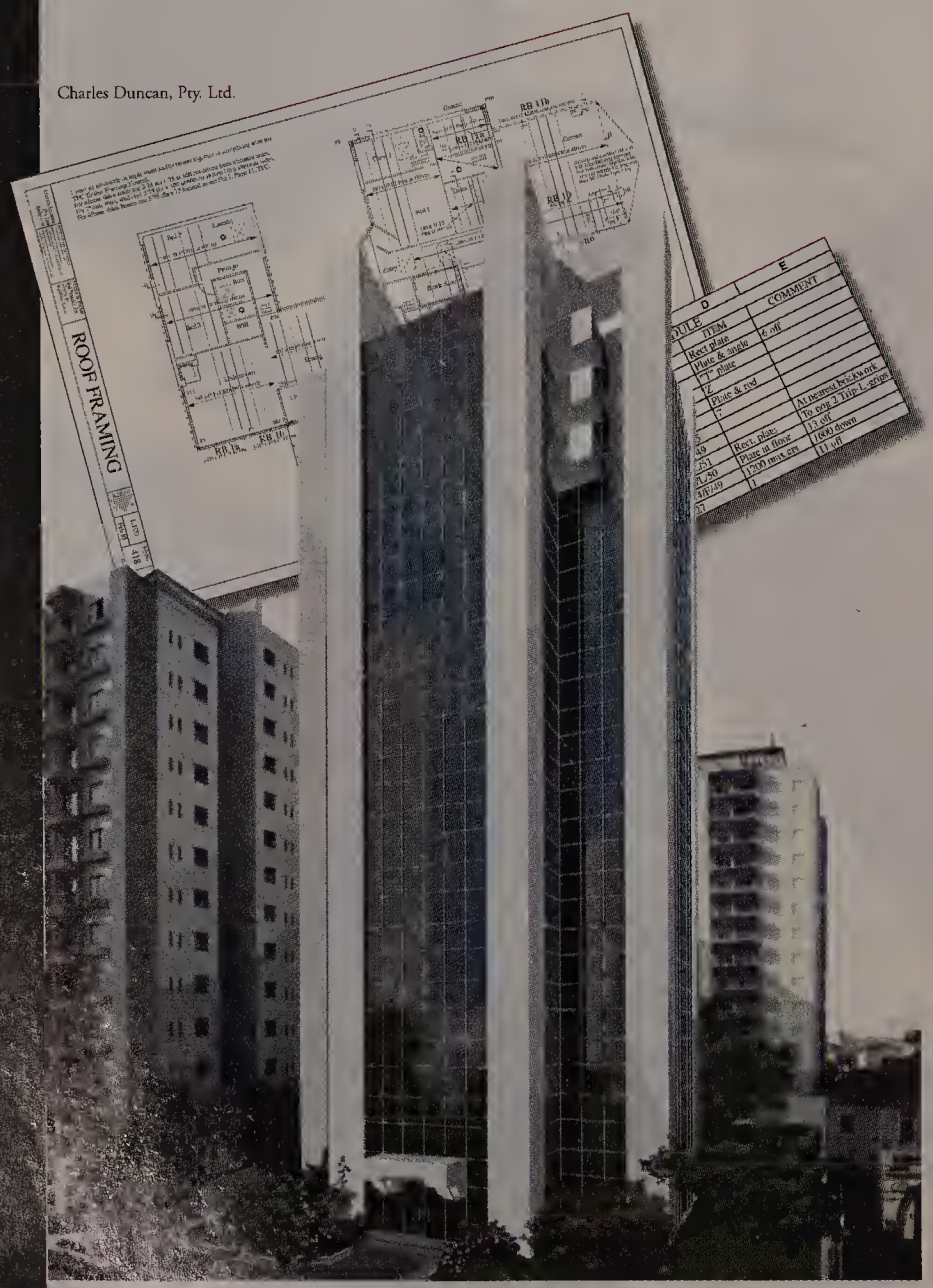
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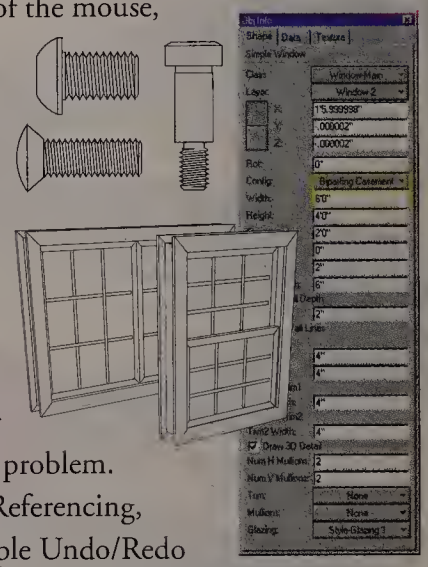
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The Vision Thing

by Andrew Gore

Shell Game

APPLE'S G4 CONFUSION HAS LEFT MAC BUYERS HOLDING THE BAG

BAD THINGS HAPPEN. And nowhere is that truer than in the computer business, where all it takes to derail a multimillion-dollar product launch are overly optimistic forecasts about the production of PowerPC G4 chips. The thing is, if something unforeseen happens, who should be expected to pay the price—the company that made the overly optimistic forecasts, or the consumer?

If knee-jerk responses are any indication, Apple believes the answer is the latter—hidden in Apple's reshuffling of the Power Mac G4 lineup is the fact that the company has failed to deliver the value it first promised (see "Fantastic Four," November 1999).

Three-Card Power Macs

Here's how it works: if you'd been lucky enough to receive a 400MHz Power Mac G4 before the G4 shell game, you would've gotten a machine with 64MB of RAM, a 10GB hard drive, and a 24× CD-ROM drive for $1,599 retail. After the shells got shifted around, that configuration was made available with a slower processor (350MHz, to be exact), but Apple still expects you to pay the same price—$1,599. So, if you purchased one of those first 400MHz G4s, you got a heck of a deal.

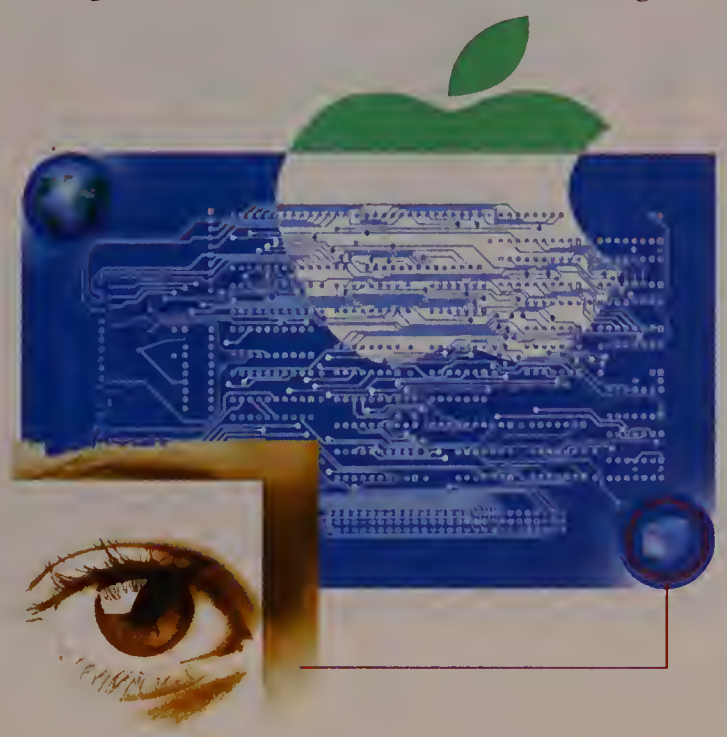
The same is true for the two higher-end machines. Now, instead of getting a 450MHz or a 500MHz machine, you get a 400MHz or a 450MHz system with the same goodies as its speedier precursor, but with no change in the price tag.

Then there were Apple's manic vacillations over what would happen to the poor souls who'd ordered a G4 before the price shuffle but hadn't yet received their Power Macs. First they were told that they were out of luck; then their orders were canceled, and they were told to order one of the new configurations at the new price.

But after Apple's e-mail server was drowned in a tidal wave of customer complaints, the company modified this policy and said it would honor a limited number of original orders placed through the Apple online store, but none made through authorized resellers. This new plan was superseded a couple days later by Steve Jobs's public intervention: all G4 orders placed before the configuration changes would be honored—at some point in time.

Overpromise, Underdeliver

Now that the shells have stopped caroming around the table like billiard balls, the question facing customers is, under which shell has Apple placed the pea? Financial issues aside, the G4 shuffle is confusing the heck out of Apple's customers. We at *Macworld* know firsthand—they're sending us mail.



In the original G4 lineup, the 400MHz machine was based on a logic-board design, appropriately code-named Yikes, that offered the same features as the blue-and-white Power Mac G3—except it came with a G4 processor. The 450MHz and 500MHz machines were based on a totally new design, code-named Sawtooth. Unlike Yikes machines, Sawtooth-based G4 Power Macs offered such advances as a 2× AGP graphics slot, an AirPort slot, an internal FireWire port, and much faster bus speeds.

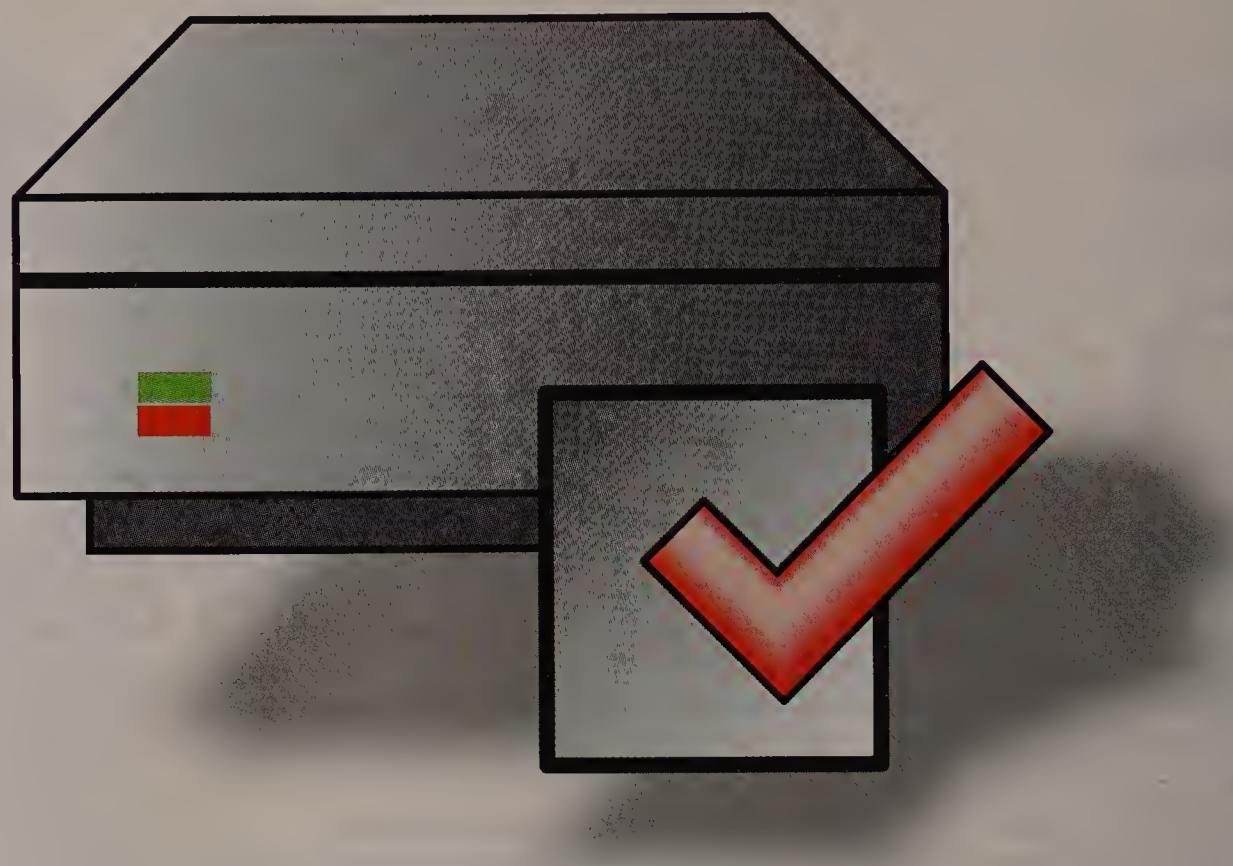
Now the 350MHz machine has the Yikes logic board, with its slower PCI slots, while the 400MHz and 450MHz machines are Sawtooth-based, adding all those cool new features I listed above. Confused? I know I am.

I can understand Apple getting stuck and not being able to get enough 500MHz G4 Power Macs—Apple doesn't control production of the chips. (They've now signed up IBM to produce G4 chips, in addition to Motorola, which should eventually help with supplies.) But having said that, I still don't think Mac buyers should get stuck paying the same amount and getting less. It's the 500MHz G4 chip Apple can't get, not the 400MHz or the 450MHz. By delivering slower systems for the same price as faster ones, Apple seems to be attempting to profit from its supplier's mistake, instead of just being its victim.

It would have been better if Apple had left the 400MHz and 450MHz configurations alone and downgraded the processor speed in the 500MHz configuration. That way, the majority of Mac buyers would have gotten the G4 machines Apple promised to deliver at the price Apple promised to deliver them at. Further, buyers wouldn't have had to play yet another round in the ever changing features-and-megahertz match game. All this fast shifting around has only served to further confuse a community of Mac users that was already scratching its collective head. Where's the right G4 for you? Under one of these three shells.... **m**

Questions? Comments? E-mail them to Andy at visionthing@macworld.com.

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**** Version 2.5.2 is scheduled to be released when Apple releases System 9.**

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News

systems

Motorola and IBM Reveal PowerPC Plans

MOTOROLA DISCUSSES FORTHCOMING POWERPC G5 PROCESSOR

by Stephen Beale



As Apple, IBM, and Motorola deal with the fallout from Apple's recent downgrade of its Power Mac G4 systems (see "A Downgrade for the G4" in this section), the companies are already making plans for a new generation of PowerPC processors that will blaze at speeds of up to 2GHz.

Motorola revealed its strategy for future PowerPC processor development during October's Microprocessor Forum in San Jose, California. The company says it is currently testing PowerPC G4 processors with AltiVec technology running at up to 700MHz. Eventually, Motorola says, the G4 design will hit speeds of up to 1GHz.

Waiting in the wings is the PowerPC G5, a 64-bit chip that will also support 32-bit processing to ensure compatibility with current applications. The G5, likely to be available in one to two years at speeds of up to 2GHz, will feature an extensible architecture, making it easier to develop specialized versions of the chip. Motorola says it will also offer a G6 processor, but has given no details on planned features.

Motorola plans to offer G3, G4, and G5 processors concurrently. In addition to developing the chips for Apple's Power Macs, Motorola will also target the growing market for embedded processors, which are used in a wide range of electronic devices.

Damage Control While Motorola was busy laying out its processor road map, the company found itself performing damage control when Apple cited a shortage of 500MHz G4 processors as the main culprit behind the recent downgrade of its Power Mac G4 systems. In September, Apple predicted lower earnings due to an unexpected shortage of Motorola's G4 processors. Motorola issued a statement that pointed the finger back toward Cupertino, asserting that Motorola had regularly kept Apple apprised of G4 availability.

A month later, after Apple downgraded its systems and brought on IBM as an alternative supplier of G4 processors, Motorola appeared to eat some crow. In a terse statement released to the press, the company said, "Motorola continues to ramp G4 production to a higher volume each week and we are steadfastly committed to meeting our production goals for Apple Computer, and for all of our customers using this

continues

HANK OSUNA

exciting new product. We are disappointed that we have not been able to meet all of Apple's demands to date, and are working diligently to rapidly remedy the shortfall. As we have said before, this is a temporary situation."

Big Blue Meanwhile, IBM has its own plans for the PowerPC architecture. Although Motorola and IBM have both contributed to the PowerPC design, each is free to develop its own chip flavors, which is why IBM only recently signed on to manufacture G4 chips with Motorola's AltiVec technology. IBM will begin supplying the chips in the first half of 2000.

IBM manufactures its G3—and now its G4—chips with copper wiring instead of the aluminum used in Motorola's G3 and Intel's Pentium. Motorola has licensed IBM's copper technology for use in the G4 and will apparently employ copper in its future chip designs. Copper-based chips have the potential to run faster than equivalent aluminum-based chips, with less power consumption and heat emission. (Some of Apple's blue-and-white Power Mac G3 systems include copper-based chips from IBM, while others use Motorola's aluminum-based chips, but there's no performance difference because the chips all follow the same technical specifications.)

IBM won't discuss its development plans publicly, but sources close to the company told MacCentral that Big Blue still sees potential in the G3 processor and plans to offer versions running at up to 800MHz. These chips could find their way into future laptops; the current G4 design is too power hungry for use in portables, and Motorola has not said whether it plans to develop a low-power version of the processor. IBM sources also told MacCentral that the company is developing a low-cost version of the G3 that will sell for less than $100 in production quantities.

Although there's no telling when the new chips will find their way into Apple's Power Mac systems, Apple generally offers a 100MHz speed bump every six months or so, assuming the processors are available in sufficient quantities.

A Display You Wear on Your Head



IT MAY LOOK LIKE A REFUGEE FROM a Ray-Ban catalog, but the $2,699 Glasstron PLM-S700 from Sony (800/352-7669, www.sony.com) is actually a head-mounted computer display that places a 0.5-inch LCD in front of each eye. Sony claims that the device creates the illusion of watching a 52-inch monitor from a distance of 6.5 feet. The 3.5-ounce display includes rechargeable lithium-ion batteries and built-in earphones.—MACWORLD STAFF

systems

A Downgrade for the G4

APPLE RECONFIGURES MAC SYSTEMS WITH SLOWER PROCESSORS

by Stephen Beale

Apple Computer, which seemed to be leading a charmed life in recent months, found itself with egg on its face in October when the company announced it was reconfiguring its Power Mac G4 product line with lower-speed versions of the chips. Instead of offering systems with 400MHz, 450MHz, and 500MHz processors, as Apple had originally planned, the company will sell the systems with 350MHz, 400MHz, and 450MHz G4 processors at the same respective price points of $1,599, $2,499, and $3,499.

Mea Culpa Apple blamed the bad news on Motorola's inability to deliver sufficient quantities of 500MHz G4 processors, and said it was signing on IBM as an alternative supplier of the chips (see "Motorola and IBM Reveal PowerPC Plans" in this section). A chastened Motorola issued a mea culpa.

The new configurations are as follows:

The 350MHz system, selling for $1,599, includes 64MB of RAM, a 10GB Ultra ATA hard drive, and a 24× CD-ROM drive. Based on the same architecture as the blue-and-white G3 systems, this configuration was supposed to include a 400MHz G4 chip.

The 400MHz system, priced at $2,499, includes 128MB of RAM, a 20GB Ultra ATA hard drive, a DVD-ROM drive, and an Iomega Zip drive. This configuration uses a new architecture that includes a faster memory bus, support for up to 1.5GB of RAM, an internal FireWire connection, a high-speed AGP port for the display adapter, and connections for Apple's AirPort wireless-networking cards. Apple previously announced that it would offer this configuration with a 450MHz G4 chip.

The 450MHz system, selling for $3,499, includes 256MB of RAM, a 27GB Ultra ATA hard drive, and a DVD-RAM drive. Like the 400MHz system, it uses Apple's new system architecture. Apple had planned to offer this configuration with a 500MHz G4.

Systems featuring the new 500MHz G4 processor won't appear until early 2000, Apple says.

Mixed Signals As Apple announced the downgrade, it also sent notices to inform customers who had preordered systems that it would cancel their orders. The following day, October 14, the same customers received an apologetic follow-up notice saying that their orders would be fulfilled. However, Apple PR reps confused the matter by making contradictory statements about which, if any, orders would be honored.

Finally, on October 18, Apple issued a definitive statement: if you ordered a 400MHz or 450MHz Power

continues



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Product WATCH

High-Speed MFP You've heard of workgroup printers; now Canon (800/652-2606, www.usa.canon.com) wants to sell you a workgroup multifunction peripheral. The **Class 3170 Facsimile Series** offers a maximum print speed of 17 ppm, up to 1200-dpi resolution, and an optional dual-line feature for simultaneous fax receipt and transmission. Prices range from $3,195 to $4,000, depending on selected options.

InDesign for Editors Taking advantage of the extensible architecture of Adobe InDesign, Adobe Systems (800/833-6687, www.adobe.com) has announced **InCopy 1.0,** a stripped-down version of InDesign that allows writers and editors to track editorial changes, fit copy, and collaborate with designers. The program, using a word processing interface, lets you work on documents in galley or layout mode. In the latter, you can see text as it will appear in print, complete with column breaks, hyphenation, and justification. Adobe won't sell the software directly; instead, it will be offered by Adobe InDesign system integrators, who will determine pricing on a site-by-site basis.

Get Reel Looking for a cheap, simple way to edit digital movies? Par Technologies (480/922-0044, www.irez.com) is shipping **Reel-Eyes,** a $35 video-editing program that lets you play feature-length movies, export video to DV streams, crop videos to fixed frame sizes, and save video clips

continues

Mac G4 before October 13, Apple will deliver the system at the original quoted price. If you ordered a 500MHz Power Mac G4, the company will provide a 450MHz system at the latter's original price.

printing

Lenticular Art Comes of Age

DIGITAL FINE ARTISTS EXPERIMENT WITH OLD PRINTING TECHNIQUE

by Stephen Beale

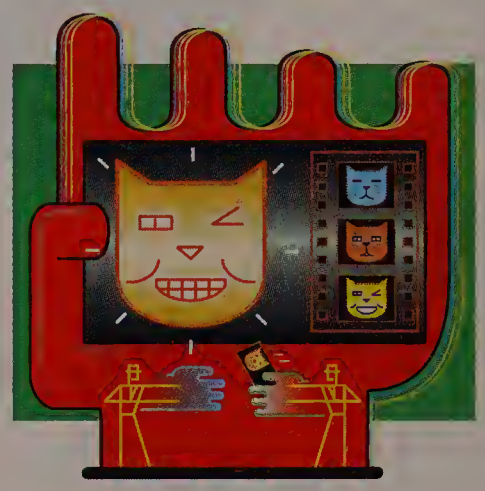
You sometimes found them in Cracker Jack boxes: small, plastic-covered wafers showing an image that appeared to change or move when viewed from different angles. They're examples of *lenticular printing*, a technique undergoing a modest revival thanks to new digital-imaging capabilities. Using this technology, you incorporate many versions of an image into a laminated print, creating artwork that simulates 2-D or 3-D animation.

Interlaced Images Producing a lenticular print basically takes three steps. You create a series of images in Adobe Photoshop or any other painting program. Then you use lenticular-imaging software to cut each picture into thin vertical or horizontal slices that are interlaced to produce one image. After printing the interlaced image, you laminate it with a lenticular lens screen, a plastic covering embossed with tiny lenses set at different angles. The lenses force the eye to focus on only one of the interlaced images at any viewing angle. When you change the angle, the image changes, too.

Although lenticular printing is often associated with cheap-looking novelties and marketing gimmicks, the technology can be used to produce serious artwork. At the recent Seybold San Francisco electronic publishing show, Digital Atelier (www.digitalatelier.com)—a printmaking studio founded by artists Dorothy Simpson Krause, Bonny Lhotka, and Karin Schminke—sponsored a gallery of large-format lenticular prints.

Mac Friendly? At present, lenticular-imaging software—which includes Flip, from Flip Signs (www.flipsigns.com), and Lenticular FIX, from Lenticular Development (909/471-0468, www.lenticulardevelopment.com)—is available only for Microsoft Windows. The Windows-only P-M1000 Motion Image Printer ($5,500), from Panasonic (800/742-8086, www.panasonic.com/alive), produces 2-by-4-inch lenticular prints that can incorporate up to six images.

Although these are currently Windows-only products, you can use your Mac to create the original images—the part of the process that in most cases will be the most time-consuming. A lenticular-imaging service bureau, such as 3D Sign & Design (909/471-0468, www.3dsign-design.com) can produce lenticular prints from standard image files submitted by customers.



graphics

Adobe Builds a New Web Presence

WILL OFFER WEB-BASED GRAPHICS APPLICATIONS

by Macworld Staff

Adobe Systems (800/833-6687, www.adobe.com), following in the footsteps of other graphics software vendors, has launched a new version of its Web site that provides a variety of services beyond simply informing users about Adobe products. The new site offers separate areas for Web, print, dynamic media, and portable document applications, each with user profiles, galleries, tips, forums, and product information. Through an enhanced version of the Adobe store, you can order Adobe software as well as third-party products. You can also run free Web-based applications to create a Web banner, optimize Web graphics, and create PDF files.

"We see this as a real opportunity to help our customers find everything they need in one place and have a place for information exchange," says Gloria Chen, Adobe.com's director of strategy and business development.

Adobe is one of several graphics developers that have spruced up their Web presence recently (see *News*, September 1999). For example, Extensis (800/796-9798, www.creativepro.com) changed its name to Creativepro.com to reflect its new emphasis on providing Web-based tools and services. And Tektronix

continues

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Product WATCH

as self-contained AVI movies. The $99 **Digital Photo Maker** from Dazzle Multimedia (888/436-4348, www.dazzle.com) is a small device that lets you capture and export video on a USB-equipped Mac. The package includes two simple editing applications, Dazzle PhotoStudio for still photos and Dazzle VideoImpression for video.

Two for One Now you can have USB and FireWire and still keep a PCI slot free. The $159 **OrangeLink FireWire/USB Board** from Orange Micro (714/779-2772, www.orangemicro.com) is a PCI card that includes two USB and two FireWire ports. Each FireWire port runs at 400 Mbps and provides 15 watts of power. The package includes **Adobe Premiere LE.**

QuickTime Jazz BitJazz (415/488-9626, www.bitjazz.com) is shipping **PhotoJazz 2.0,** a new version of its lossless image-compression software that adds QuickTime support. The company says you can compress an image to less than half its original size with no loss of quality. The upgrade, which adds support for 16-bit image channels, includes an Adobe Photoshop plug-in, a QuarkXTension, and QuickTime components that let you embed PhotoJazz images in QuickTime movies. Three versions are available: the $99 **PhotoJazz Expert,** which offers the full set of PhotoJazz features; the $79 **PhotoJazz Pro,** which supports 8-bit channels only; and the $29 **PhotoJazz Lite,** which supports RGB only.

(800/835-9433, www.tek.com) has launched a site called Creativesite.com where artists and photographers can post examples of their work.

multimedia

Macromedia Weaves Web Upgrades

FIREWORKS MAKES NICE WITH ADOBE APPS

by Frith Breitzer

Macromedia (415/252-2000, www.macromedia.com) may be learning that the best way to compete with Adobe is to beat it at its own game. With the release of Macromedia's Dreamweaver 3 and Fireworks 3, Macromedia is trying to out-Adobe its rival by improving integration with popular Adobe products.

When Adobe (800/833-6687, www.adobe.com) bundled its ImageReady 2.0 with Adobe Photoshop 5.5—essentially making the Web image editor free to Photoshop users—it was a clear challenge to Macromedia, which has focused on Web graphics. With their tight integration and similar interfaces, ImageReady 2.0 and Photoshop 5.5 are designed to draw users away from Fireworks, a popular Macromedia program that lets you create Web graphics with a combination of vector and bitmap editing tools.

Going Native Macromedia's response is Fireworks 3, which will now edit native Adobe files. You can import Adobe Illustrator and Macromedia FreeHand files with full editability, and you can export Fireworks vector graphics as Illustrator files. You can import Adobe Photoshop files with layers and editable effects, and the program now works with third-party Photoshop plug-ins, such as Alien Skin's Eye Candy.

In addition to improving integration with Adobe products, Fireworks 3 lets you export SWF files for use in Flash 4, Macromedia's popular vector animation software. You can also preview rollovers and gamma differences between Macintosh and Windows displays.

Weaving HTML The integration theme carries over to Dreamweaver 3, an upgrade to Macromedia's HTML authoring program that works with native Fireworks and Flash 4 files. In addition to importing the files directly, you can launch Fireworks or Flash from within Dreamweaver to edit the files. When you quit Fireworks or Flash, the modified graphic gets placed in the Dreamweaver document. In this feature, Macromedia may be anticipating the next version of Adobe GoLive, which will likely boast improved synergy with Adobe's other products, including InDesign, Photoshop, ImageReady, and Illustrator.

Other new Dreamweaver 3 features include local and remote file synchronization, the ability to define styles without using Cascading Style Sheets, and the ability to edit tags within the document window.

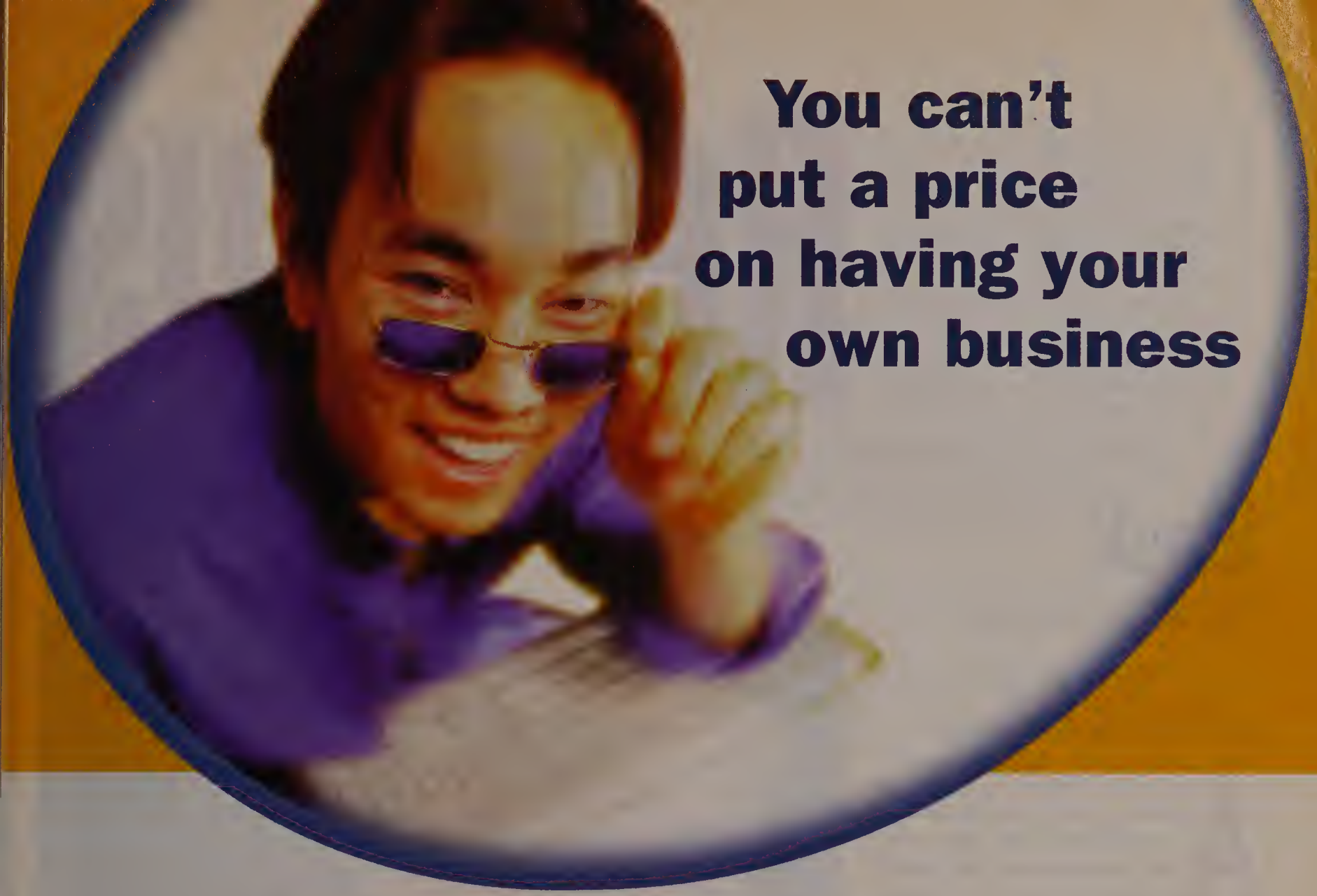
Dreamweaver 3 and Fireworks 3 are expected to ship by the time you read this.



SUZANNE ROADY

Epson Revamps Ink-Jet Printers

EPSON AMERICA, SUDDENLY FACING STIFF COMPETITION in the Mac printer market, has announced two new ink-jet models (800/463-7766, www.epson.com). The $279 Epson Stylus Color 860, which replaces the Stylus Color 850, produces text documents at up to 9.5 ppm and photos at up to 7 ppm. The Epson Stylus Color 760, $199 after a $30 rebate, prints black text at up to 7 ppm and color documents at up to 6 ppm. Both printers feature USB and parallel ports but no serial connections. Epson offers a $159 print server for both models that allows connection to Ethernet or AppleTalk networks.—MACWORLD STAFF



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Reviews

iBook

BIG, HEAVY PORTABLE OFFERS LOTS OF STYLE BUT LIMITED SUBSTANCE



ARNOLD TIOSEJO

ALTHOUGH APPLE'S NEW CONsumer portable may be one of the company's most hotly anticipated products ever, the iBook's reality falls short of its media-generated hype. It's not exactly a case of the emperor having no clothes—the iBook is a natty dresser—but what's under that striking attire leaves something to be desired in terms of size, ease of use, and flexibility. The iBook will have some appeal for students willing to work around its limitations, but novices may find their needs better served by one of the new iMacs—or future iBook revisions that address its current drawbacks.

Dressed to Thrill

The iBook's ingenious industrial design, featuring a gently curved clamshell, white translucent plastics, and brightly colored rubber bumpers, makes the portable look small. However, it's actually larger and heavier than a PowerBook G3, weighing 12 ounces more than Apple's bronze laptops.

Part of the reason for the iBook's larger dimensions is its rugged construction—the shell and internal case are impact resistant. After a couple weeks of carting it around, we can attest to the portable's overall solidity. However, it did suffer a loose metal shield around the Ethernet port, but only after several dozen cable insertions.

Other nice touches include a sturdy handle that folds up from the back and a latchless clamshell that automatically wakes the iBook up when opened. We also like the way Apple designed the iBook's indicator lights. Rather than flashing on and off, the sleep indicator throbs. And the light that rings the power plug glows orange when the battery is charging and green when it's full. We hope Apple adds these design refinements to the next PowerBook.

Although the laptop's low-profile keyboard is about the same size as the bronze PowerBook G3's, our informal iBook jury was split: some found it uncomfortable to type on, while others found its crisp action superior to the PowerBook keyboard's.

Our jury agreed that the single speaker sounds tinny and the 12-inch active-matrix screen, while offering a crisp, bright display, seems lost in the iBook's large frame. The lack of a VGA connection precludes use of external monitors or multimedia projectors. Also missing is a FireWire port,

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Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

OUTSTANDING: ♦♦♦♦♦ VERY GOOD: ♦♦♦♦ GOOD: ♦♦♦ FLAWED: ♦♦ UNACCEPTABLE: ♦

which would allow connection of video cameras and high-speed storage devices.

RAM Makes the iBook

When we first booted up the iBook, we were shocked by its poky performance, especially considering that it uses a 300MHz G3 processor. Applications were slow to launch, and when switching between applications, we could see windows redraw themselves line by line. Then we found that the test unit, which had the iBook's standard 32MB of RAM (the lowest RAM allocation in any current Mac model), came preset with an additional 32MB of virtual memory. Virtual memory has long been the bane of portables, whose slower, power-frugal hard drives are often asleep when an application wants something from the drive's virtual-memory partition.

Although reducing virtual memory helped speed things up, the performance problems didn't go away until we added 32MB of physical RAM. The added memory also fixed the iBook's annoying tendency to crash. Our advice: don't even consider buying this cute and cuddly portable without add-on RAM. (Thanks to the iBook's pop-up keyboard, RAM is easy to install.)

Once we resolved the RAM issues, the iBook's performance was about what you'd expect (see "iMac to Go?"). In general, performance was a little slower than that of a 333MHz PowerBook G3. The built-in ATI Rage Mobility graphics accelerator and 4MB of video RAM offer fine display performance for standard operations, but the iBook is extremely sluggish when running such demanding 3-D games as MacSoft's Unreal.

The iBook's 3GB hard drive was also slow, but no slower than many other portable drives. However, the 3GB capacity feels a bit tight compared with the minimum 4GB in PowerBooks. The iBook has no modular bays, so you can increase storage only by adding an external USB drive or by replacing the internal drive.

Apple estimates that the iBook can run for six hours on a single battery charge, but that proved to be optimistic. In three trials using the standard Energy Saver configuration, the iBook ran for an average of four hours before losing power—about half an hour longer than the best time for the PowerBook G3. Four hours on a single battery is certainly impressive, but quick battery swapping—a viable option with the PowerBook G3—is not possible because you have to unscrew a cover on the iBook's bottom to switch batteries.

Plug and Pray

The iBook features a single USB port for connecting keyboards, mice, serial adapters, and other components. However, USB has proved to be unreliable in Apple's portables; attached peripherals have been known to suddenly cease working, forcing you to unplug the USB connector, wait a few seconds, and plug it back in. Fortunately, most USB-hardware developers have updated their drivers to be PowerBook savvy, reducing, but not entirely eliminating, vanishing-peripheral syndrome.

We're sorry to report that the iBook shows the same tendency to lose USB devices, although as far as we can determine, USB didn't cause any system crashes. However, both test units often crashed when we attempted to wake them from sleep, a problem that disappeared when we added RAM. Making matters worse, when you use the hardware reset switch to restart the iBook, the system clock resets itself to 1/1/04, 12:01 a.m.

Since there are no media bays or PC Card slots, all you can add to an iBook—aside from external USB devices—is physical RAM and an AirPort wireless-networking card, which had yet to ship as we went to press.

From a software perspective, using an iBook is exactly like using a PowerBook, involving such cumbersome utilities as the Location Manager. Using portables is inherently more complex than using desktops, due to unpredictable communications connections and the need for power management. Yet Apple has done nothing to make these portables easier for novices to use.

Macworld's Buying Advice

Apple clearly had to make some compromises to build a $1,599 portable Mac. Unfortunately, these compromises have produced a laptop that's big, heavy, and limited in its expansion options. While $1,599 is a breakthrough price for a Mac portable, the iBook is no PowerBook—and it wasn't long ago that you could buy an original PowerBook G3 (one of the heavier, fatter ones) for $1,999. If you compare the iBook to an iMac—as Apple suggests—then it really becomes a challenge to defend the price, considering that a $1,299 iMac DV comes with FireWire, a DVD drive, 64MB of RAM, a 10GB hard drive, and an 8MB ATI Rage 128 graphics accelerator. We'd have a much easier time recommending an iBook if it included the 64MB of RAM needed for acceptable performance.

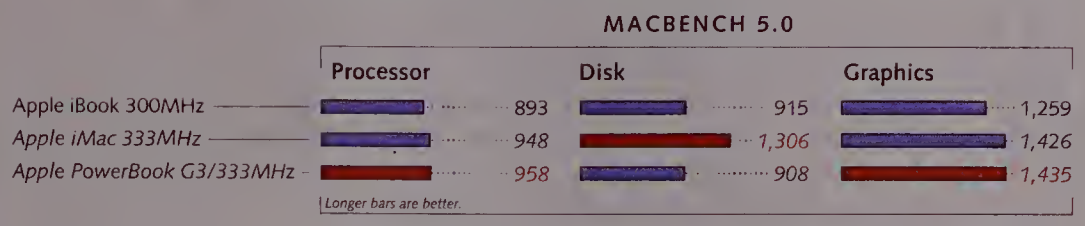
The iBook's industrial design is impressive, as are some refinements, such as the latchless case. For students on a tight budget who need a portable, the iBook might fit the bill, although you'll have to add at least 32MB of RAM—for an extra $100 or so—to get a usable configuration. But our guess is that many novices will be happier with the less expensive and more full-featured iMac.—ANDREW GORE

RATING: ▮▮▮ **PROS:** Innovative industrial design. **CONS:** Big; heavy; small screen; limited configuration and expansion options; too hard for novices to use; has stability problems with base RAM configuration. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **COMPANY'S ESTIMATED PRICE:** $1,599.

Macworld LAB TEST

iMac to Go?

Best results in red. *Reference systems in italics.* MacBench 5.0 scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 for each test.



Behind Our Tests

We tested each system with Mac OS 8.6, 64MB of RAM, a 2MB system disk cache, and virtual memory disabled.—**Macworld Lab testing supervised by Jeffy Milstead**

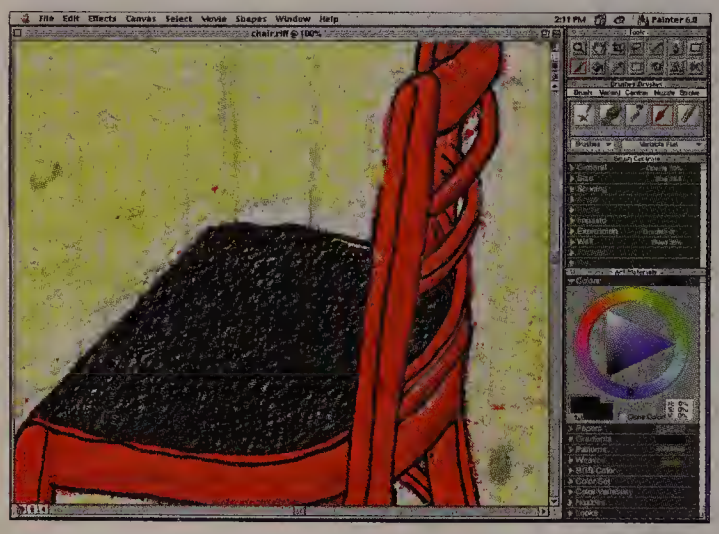
MetaCreations Painter 6

NATURAL-MEDIA PROGRAM ACHIEVES NEW REALISM

WHEN YOU NEED A SET OF powerful, versatile painting tools, nothing comes close to MetaCreations Painter. Version 6 is the program's most significant upgrade in years, offering important interface changes and a completely rewritten brush engine that provides an extraordinary new level of realism.

The Big Squeeze

Painter's infamous palette-heavy interface hasn't become a model of spareness, but MetaCreations has streamlined and consolidated the program's vast number of options. It now divides the bulk of controls among the Objects, Brush Controls, and Art Materials palettes. Subcategories, stacked atop each other, expand to reveal each palette's controls. For example, the Brush palette's 14 subcategories include Size, Spacing, and Angle controls. This may sound complicated, but it's much better than in previous versions, which contained separate palettes for many options.



Lay It On Thick Painter 6's new Impasto tools create thick, viscous 3-D ink you can push and smear around the canvas.

Other improvements include new Adobe Photoshop–like Layers. Painter has long let you maintain separate elements as *floaters* but has never made it possible to organize a painting into discrete layers. Now you can rearrange, lock, hide, and group layers, as well as open and save layered Photoshop files.

Painter's interface still has its cumbersome moments, however. For example, although the Brush Controls palette contains most of the controls for configuring a brush, a few options are hidden under a menu bar in the Brushes palette. We'd prefer to see them in the main menu bar.

Painter doesn't have a learning curve so much as an experience curve. To really understand and appreciate all the program offers, you'll need to use it—a lot.

Strokes of Genius

Painter's defining feature has always been its set of natural-media tools, mimicking real-world media. With the brushes in previous Painter versions, as in most paint programs, you applied dabs of colored pixels to the online canvas. To get the appearance of paint strokes, you put dabs close together. Although this technique looks fine at a glance, it can present problems such as broken lines and repeating patterns. Moreover, this method cannot emulate some real-world effects.

Painter 6's completely rewritten brush engine uses new algorithms that eschew paint dabs for real, continuous lines. Although some brushes still use dabs of pixels, many new ones render separate lines for each brush hair. This technique reduces the artifacts the previous brush method created, and produces smooth, antialiased strokes that rotate to follow the direction of your brush.

Real-world painters accustomed to loading their brushes with paint (that is, letting their brush absorb colors already on the canvas) will love the new Brush Loading feature. With it, brushes can create smooth, realistic blends and smears that interact with underlying colors. Of course, such real-time calculations can tax your Mac. Painter 6 did a good job following our paint strokes; however, even our 350MHz Power Mac G3 turned rather sluggish with the large brushes.

If you hold Painter's airbrushes in one location, they now continue to deposit paint; if you're using a tablet, the airbrushes respond more realistically to tilt and bearing. Where previous versions always applied paint in a circle, Painter 6's airbrushes understand that if you tilt your pen to the side, they should apply paint in a cone-shaped fashion with less-even distribution. The effect is incredibly realistic.

Painter 6 supports Wacom's Intuos tablets, and more tools respond to tablet controls. The Image Hose, for example, lets you scale and orient nozzle images through pressure and tilt.

Although Painter's brush control and variety are unsurpassed, we would like to see a few additions, such as Photoshop-like brushes for simple retouching and for quickly filling in areas with a solid color. And after six revisions, Painter still won't allow you to use the shift key to restrain your brushstroke to a straight line—a standard Mac convention that has been around since MacPaint.

Tools and Tweaks

The Dynamic Text feature adds a complete text environment to Painter. Along with full scaling, shearing, tracking, and leading, it provides excellent text-on-a-path controls. Interactive Bézier handles bend and curve text easily. The various curvature styles let you choose whether to curve only the baseline or both the baseline and the tops of letters, for example. Automatic drop shadows and blurring are also available. Unfortunately, there's no Undo in the Dynamic Text feature, nor can you kern individual letter pairs.

Perhaps the program's coolest—and funnest—new feature is the set of Impasto tools, brushes that lay down thick, viscous 3-D ink you can build up, push down, and mush around the canvas. Full specular highlights and visible brushstrokes create a realistic, dynamic image.

Macworld's Buying Advice

Painter's brushes and tools have always been startlingly realistic, but those in version 6 make you realize how much real-world functionality the program was missing. Along with the improved interface, they make Painter 6 a worthwhile upgrade. New users may find the tool set daunting, but the program's output is worth the effort.—BEN LONG

RATING: ♦♦♦♦ **PROS:** Much improved brush controls and brush performance; improved interface. **CONS:** Overwhelming number of controls; interface still somewhat disorganized. **COMPANY:** MetaCreations (800/846-0111, www.metacreations.com). **LIST PRICE:** $399.

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Gigabit Ethernet Cards

FAST NETWORK CARDS RUN INTO CPU BOTTLENECK

NOW THAT 100-MBPS DESKTOP Ethernet connections have become commonplace, network administrators are looking for the next silver bullet to improve network performance. Gigabit Ethernet, also known as 1000BaseT, running at ten times the speed of 100BaseT, promises to be that silver bullet. Alas, today's Mac CPUs can't achieve Gigabit's full potential. Even on a Power Mac G3, the fastest speed attainable with Gigabit Ethernet is barely twice the speed of 100-Mbps Ethernet. Still, as CPUs gain speed, they'll be able to take advantage of improved network performance. To that end, we checked out three Gigabit Ethernet PCI cards: Asanté Technologies' AsantéFast 1000 GigaNIC, Farallon's PN9000-SX, and Team ASA's Stallion GE-II.

All three products are easy to install: just plug in the card, load the drivers, and reboot. Hooking up the cards' fiber-optic connections is as simple as with copper Ethernet, but you can run the wires much farther: up to 500 meters.

The CPU speed limits Gigabit Ethernet performance because of the processing overhead. Standard Ethernet packets are a maximum of 1,500 bytes long, which means a computer must process more than 80,000 packets every second to achieve Gigabit Ethernet's full throughput. It turns out that a Power Macintosh G3 can process only about a fifth of that, limiting performance to less than 100 Mbps. To circumvent this problem, Gigabit Ethernet supports larger packets—called jumbo frames—of up to 9,000 bytes each. With these larger frames, theoretically even a G3 Mac can move data at a gigabit per second. Unfortunately, the Mac OS doesn't yet support jumbo frames, so this capability is largely unusable. Team ASA bundles a utility that lets you transfer files using jumbo frames, but you can't mount volumes or copy files through the Finder, and the program won't run under Mac OS 8.6.



SUZANNE ROADY

Team ASA's Stallion GE-II

All three products provide performance-boosting aids, including offloaded TCP/IP checksum generation and full-duplex communication. Asanté supports the Ethernet 802.3 p and 802.3 q quality-of-service standards, especially useful in multimedia networks. Team ASA's card ships with Mac OS X drivers.

On-board diagnostic aids are a big help in troubleshooting network woes. Asanté's GigaNIC excels here, with six status indicators for power, link, transmit, receive, bus type, and flow control.

The most common application for Gigabit Ethernet is in high-volume servers; a single 1000BaseT card is easier to configure and manage than multiple 100BaseT cards and has the potential for better performance. With that in mind, we tested each card using a mix of client-server file transfers (see "Faster, but Not by Much"). Team ASA had the best showing, hitting 91 Mbps, with the Asanté card a close second. The Farallon card was somewhat slower. However, keep in mind that gigabit performance is largely a function of overall system speed. On faster CPUs, you'll see better throughput.

Macworld's Buying Advice

If your servers are running rough at 100 Mbps, consider upgrading to Gigabit Ethernet. You'll have to invest in a gigabit-capable Ethernet switch as well, so this won't be inexpensive. Team ASA's Stallion GE-II card is zippy, and the only one in our roundup that supports OS X, but it suffers from weak documentation and online support. Mac users on a small budget are better off with Farallon's PN9000-SX; the manufacturer's excellent support more than compensates for the card's slower speed. The AsantéFast 1000 GigaNIC, while the priciest card, is fast and well designed, and it includes advanced features that may be useful in a multimedia environment.—MEL BECKMAN

AsantéFast 1000 GigaNIC

RATING: ♦♦♦♦ **PROS:** Excellent performance; helpful status lights. **CONS:** Expensive; no jumbo-frames utility. **COMPANY:** Asanté Technologies (800/566-6680, www.asante.com). **COMPANY'S ESTIMATED PRICE:** $1,295.

Farallon PN9000-SX

RATING: ♦♦♦♦ **PROS:** Excellent documentation. **CONS:** Slow performance; minimal status lights; no jumbo-frames utility. **COMPANY:** Farallon (800/613-4954, www.farallon.com). **COMPANY'S ESTIMATED PRICE:** $949.

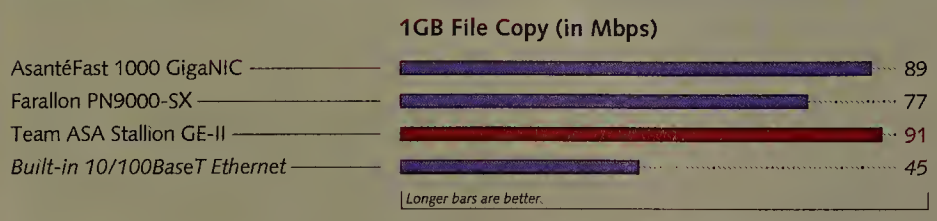
Team ASA Stallion GE-II

RATING: ♦♦♦½ **PROS:** Jumbo-frames utility; OS X driver support. **CONS:** Weak documentation; weak online support. **COMPANY:** Team ASA (619/279-2316, www.teamasa.com). **COMPANY'S ESTIMATED PRICE:** $995.

Macworld LAB TEST

Faster, but Not by Much

Best results in red. *Reference configuration in italics.*



Behind Our Tests

For detailed information on our tests, see the review online at www.macworld.com/2000/01/reviews/.—**Macworld Lab testing supervised by Kevin Mitchell**



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PC Emulators

VIRTUAL PC AND BLUE LABEL POWEREMULATOR

SURE, PCS ARE DIRT CHEAP these days, but do you really need another computer? Even if you occasionally—or regularly—use PC applications, PC-emulation software for your Mac can save you from purchasing a beige box or Windows laptop. Connectix's Virtual PC 3.0 and Lismore Software Systems' Blue Label PowerEmulator 1.5 both run PC software on a Power Mac, but otherwise they are very different pieces of software.

Both packages use software and the PowerPC's processing muscle to create a fake PC, tricking Windows applications into thinking they're running on a real 80X86 machine. However, the differences between the two packages are stark. You can buy Virtual PC 3.0 in versions that include either DOS only or Windows and DOS. Blue Label forces you to install your own copy of Windows. Virtual PC lets you run PC software inside a Mac window or full screen; Blue Label offers only the latter option. If you're running under Mac OS 9, Virtual PC lets you use PC USB devices, including those with no Mac drivers. Blue Label doesn't support USB.

Virtual PC has numerous functions for sharing data between Mac and PC environments, including shared folders, drag and drop, and—new in this version—the ability to use AppleScript to launch and interact with PC applications. Blue Label offers only limited provisions for accessing files on Mac hard drives.



Flexible Setup Connectix's Virtual PC 3.0 lets you set up multiple volumes, each running a different OS.

Blue Label's configuration interface is also highly modal and nonintuitive. Virtual PC is much more flexible, making it easy to set up and use multiple independent boot "drives," each with a different OS or application set. One of our test systems sports four configurations: Windows 98, Windows NT 4, Windows 2000, and Linux. Indeed, we were able to install and run Red Hat Linux 6.1 out of the box, as well as a beta version of Windows 2000. Virtual PC can also share the Mac's Internet connection, precluding the need for a separate IP address.

Although Virtual PC can run Windows NT 4 applications, the software's Mac-integration features are available only for Windows 95 and Windows 98. However, some applications, such as Microsoft Internet Explorer 5.0, ran faster under NT than under Windows 98.

The bottom line, of course, is performance, and while neither program compares favorably with a real PC (see "Windows on Your Mac"), we found Virtual PC's speed on 350MHz and 400MHz blue Power Mac G3s to be adequate for most applications we tested.

The Blue Label software was much more sluggish, and also less stable: we experienced frequent crashes under PowerEmulator and hardly any under Virtual PC. However, neither program does a great job of running graphics-heavy applications, and while both support Voodoo 1 and 2 graphics-accelerator cards, contemporary PC games are so CPU-intensive that we can't recommend either product for serious gaming.

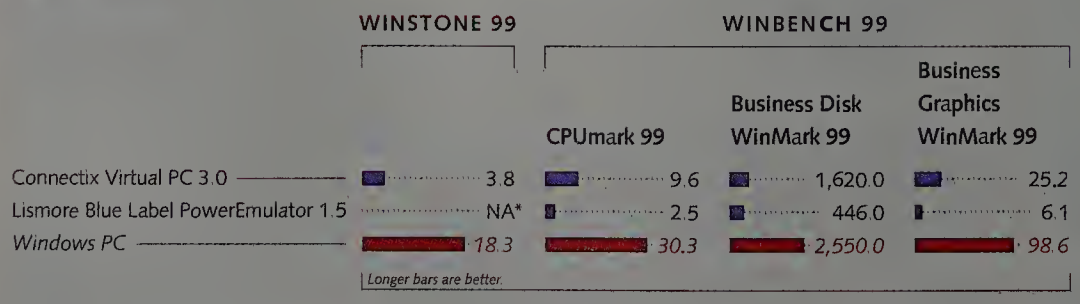
Macworld's Buying Advice

Blue Label PowerEmulator 1.5 provides good value, considering its low price, but its lackluster performance, cumbersome user interface, and inferior Macintosh integration make it difficult to recommend. Virtual PC 3.0 is a mature and feature-rich product that meets the needs of anyone who wants to run typical PC-based productivity applications. Web developers who need to verify how pages render with various PC browsers and operating systems will especially like Virtual PC's flexible configuration options. Users who run PC applications under a single operating system will be equally happy with its improved network integration.—STEPHAN SOMOGYI

Macworld LAB TEST

Windows on Your Mac

Best results in red. *Reference system in italics.*



* Not applicable; Blue Label PowerEmulator was unable to simulate the minimum physical RAM required to run the test.

Behind Our Tests For detailed information on our tests, see the full review online at www.macworld.com/2000/01/reviews/.—**Macworld Lab testing supervised by Kevin Mitchell**

Blue Label PowerEmulator 1.5

RATING: ●● **PROS:** Low cost. **CONS:** Cumbersome interface; slow, unstable performance; takes over Mac screen. **COMPANY:** Lismore Software Systems (www.lismoresoft.com). **DIRECT PRICE:** $29.95.

Virtual PC 3.0

RATING: ●●●● **PROS:** Multiple configurations; shares Mac's IP address. **CONS:** No Windows NT or 2000 integration; slower than a real PC. **COMPANY:** Connectix (800/950-5880, www.connectix.com). **COMPANY'S ESTIMATED PRICE:** $179.

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HP DeskJet 970

HP'S LATEST INK-JET PRINTER TRUMPS THE COMPETITION

UNTIL RECENTLY, BUYING AN ink-jet printer for the Mac meant checking the Epson catalog for the Stylus Color or Stylus Photo model that would best fit your needs. Hewlett-Packard and other ink-jet manufacturers had largely abandoned the Mac market, and Epson's high-quality color output was a good match for graphics-conscious Mac users. Now HP is back, and its latest model, the DeskJet 970, is likely to cause some sleepless nights for the folks at Epson. It's not the cheapest printer you can buy, but it offers an unbeatable combination of speed, versatility, and output quality for an affordable $399.

Specsmanship

Given the latest advances in ink-jet technology, most printers sold these days offer output quality that would have made jaws drop a few years ago. Nevertheless, this model raises the bar a notch or two, especially considering that it uses four colors as opposed to six in Epson's Stylus Photo models. If you print on glossy media in HP's new enhanced photo mode—producing the equivalent of 2,400-by-1,200-dpi output—images rival those you would get back from a photo lab, with crisp detail and vibrant but not oversaturated colors. Yet even when printed at 600 dpi, the images look great. As with most printers, however, to get the most accurate color you may need to tweak settings via the built-in color-management software.

Although 2,400 by 1,200 dpi yields the best output quality, the DeskJet 970 isn't too shabby at lower resolutions. Even images printed at 300 dpi on glossy paper looked surprisingly good, although we did notice minor banding in some areas. We were also pleasantly surprised by the printer's plain-paper output, especially at 600 dpi. We saw serious banding when printing photos on plain paper in the 300-dpi draft mode, but text quality, even at the lowest resolution, was excellent.

The printer's technical specifications are similar to those of Epson's Stylus Color 900 (see *Reviews*, June 1999), and comparisons between the two models are inevitable. Each is a four-color printer that's capable of producing color pages at up to 10 ppm (12 ppm for black), and each is versatile, able to print text documents and full-color images at a high quality level. However, that impressive 10-ppm performance spec assumes you'll be printing at a low resolution, 180 or 360 dpi on the Stylus Color 900 and 300 dpi on the DeskJet 970. If you want the best-looking photos, you'll have to boost the resolution, and that slows the printing process considerably.

This is where the DeskJet 970 stands out. Both printers offer roughly the same output speed at their highest resolution—2,400 by 1,200 dpi for the HP printer and 1,440 by 720 dpi for the Stylus Color 900—producing a full-page Adobe Photoshop document in about 10 minutes. However, the DeskJet 970 can match or exceed the Stylus Color 900's maximum image quality even when printing at 600 dpi, and at this resolution, it took just 5 minutes to produce our Photoshop document on the HP printer. The bottom line is that the DeskJet 970 produces great-looking photos about twice as fast as the Stylus Color 900, and even better-looking photos if you're willing to wait a little longer.



SUZANNE ROADY

Attention to Detail

The DeskJet 970 sports many other nice touches, including a print-cancel button and a low-ink indicator, both on the front panel, as well as a 150-sheet paper tray. It's the first low-cost ink-jet model to provide automatic two-sided printing (also known as duplexing), although you'll need thick paper to avoid bleed-through when printing images. The DeskJet 970 is also one of the quietest printers we've ever tested.

HP has largely avoided jumping on the iMac industrial-design bandwagon, but the DeskJet 970's curved surfaces and elegant dark-gray color scheme certainly break the mold of boxy beige peripherals.

The DeskJet 970's printer software lacks the range of color and layout controls you'll find in Epson's ink-jet printers, but it does provide access to all basic print features, including two-sided output. In addition to supporting ColorSync, the printer software offers a simple built-in color-matching function that allows you to adjust saturation, brightness, and color tones.

The printer features built-in USB and parallel interfaces, but if you use an older Mac with a serial port, you're out of luck; HP has firmly committed to USB as the interface of choice for the Mac. HP offers AppleTalk and Ethernet connectivity through the optional $259 JetDirect 300X External Print Server. At present, HP doesn't offer a PostScript option, but it's likely that other companies will offer software that converts the DeskJet 970 into a PostScript printer.

Macworld's Buying Advice

After years of ceding the Macintosh ink-jet market to Epson, HP has roared back with a printer that sets new standards for quality and performance. Some users may find its speed makes it a suitable replacement for a color or monochrome laser printer, although you will pay more for ink-jet consumables. If you have an older Mac without USB, or if $400 is beyond your budget, consider one of Epson's current models. But if you're seeking a $400 ink-jet printer that works with USB-equipped Macs, this one's a no-brainer: Buy the DeskJet 970.—STEPHEN BEALE

RATING: ♦♦♦♦½ **PROS:** Fast; quiet; versatile; prints great-looking text and images; has automatic duplexing mode. **CONS:** No serial port. **COMPANY:** Hewlett-Packard (800/552-8500, www.hp.com). **COMPANY'S ESTIMATED PRICE:** $399.



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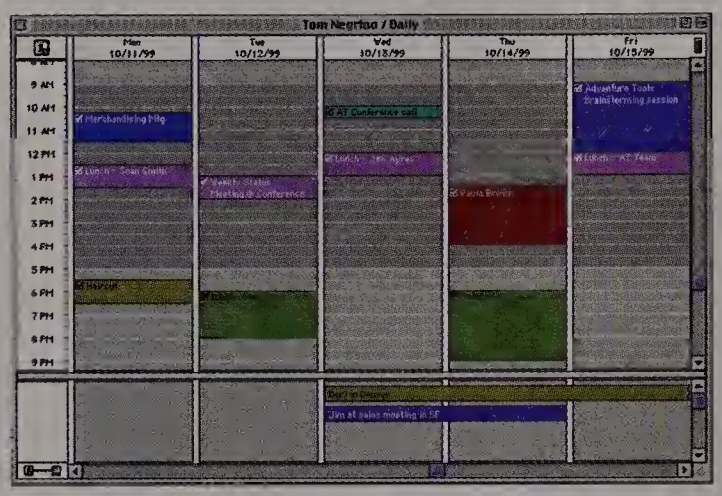
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Meeting Maker 6

ACCESS YOUR CALENDAR EVERYWHERE—AT A PRICE

WITH NETWORKED OFFICES becoming the norm these days, groupware applications, such as multiuser calendaring, have turned into big business. Unfortunately, market leaders Lotus Notes and Microsoft Exchange have left Mac clients out of their network dance. Now Up-to-Date and Now Contact were a complete Mac solution, but suffered from years of neglect after Qualcomm acquired Now Software (new owner PowerOn Software promises an update by the end of 1999). The only company that has kept the faith is On Technology with Meeting Maker, which runs equally well on the Mac; Windows 95, 98, and NT; and Solaris. Meeting Maker 6 adds Palm synchronization capabilities and a Java client that can access your schedules through a Web browser. However, it still suffers from a drab interface.



Drab Appearance Meeting Maker 6 does a good job of scheduling, but its user interface is overdue for a face-lift.

Client-Server Without Tears

Meeting Maker's server component, which handles an unlimited number of users, can run on all the supported platforms, with modest system requirements. Any Power Mac past the 7600 will do, and Windows servers can get by with a 486-based machine. Client requirements are even more minimal. On Technology claims that a Macintosh Plus or better will do the trick; however, we didn't test any 680X0 clients.

Installing the Mac server with Mac and Windows clients was painless, taking less than an hour. However, migrating from Now Up-to-Date to Meeting Maker was considerably more difficult than the manual indicated. Meeting Maker's Calendar Converter utility did not automatically recognize the Now Up-to-Date export file, and importing failed because Meeting Maker can't handle the latter program's open-ended events (those that have a start time but no end time). We had to delete the misunderstood items manually from the export file.

Once set up, Meeting Maker does an excellent job of proposing meetings, scheduling activities, and arbitrating among people's schedules. Potential attendees can accept or decline meetings via messages sent over the LAN or through Internet e-mail. The program also supports Proxies—users, such as a boss's assistant, who can propose and accept meetings on behalf of others. One minor problem is that the program assumes all clients are in the same time zone as the server. If you are not, you'll have to compensate for time zone differences when scheduling—the software won't do it for you.

New in this version is the ability to synchronize with Palm handheld organizers. We had no problems synchronizing Meeting Maker data to a variety of Palm devices, but some Meeting Maker event attributes, such as location, have no equivalent in the Palm software, so naturally they don't get synchronized. To use the synchronizing feature, you'll also need Palm Desktop 2.0 or later.

Managing Large Crowds

Updating client software for hundreds of users can be a headache for network administrators, but Meeting Maker 6 makes it easy. After you have upgraded the server, the program installs new client software on client Macs or PCs whenever a user connects to the Meeting Maker server. You still have the option of posting client software to a file server for manual installation. This has the added benefit of preventing a flurry of network activity when users log on the morning after the server upgrade.

We ran Meeting Maker 6 on three Macintoshes, a PC running Windows 98, and another PC running Windows 95. To gauge the software's performance in a large corporate setting, we also spoke with network administrators who were using Meeting Maker in configurations ranging from 70 to almost 1,000 users. Meeting Maker's performance pleased them all, even on older hardware. For example, Apple Computer's own installation features a Power Mac 8500/180 serving more than 700 Mac clients on AppleTalk and TCP/IP; the administrator believes the dedicated server is far from reaching its limits.

Although On Technology has done a good job of adding new features and improving the software's performance, the company needs to work on Meeting Maker's tired-looking user interface, which seems barely changed since we last reviewed this program in 1995. Of the different platforms' client interfaces, the most attractive is the Java client for use in Web browsers.

Meeting Maker clients come in packs of 10, 50, and 100 users, which you can mix and match among platforms as you wish. Clients cost between $85 and $95 each, depending on volume, with discounts for educational, nonprofit, and government organizations.

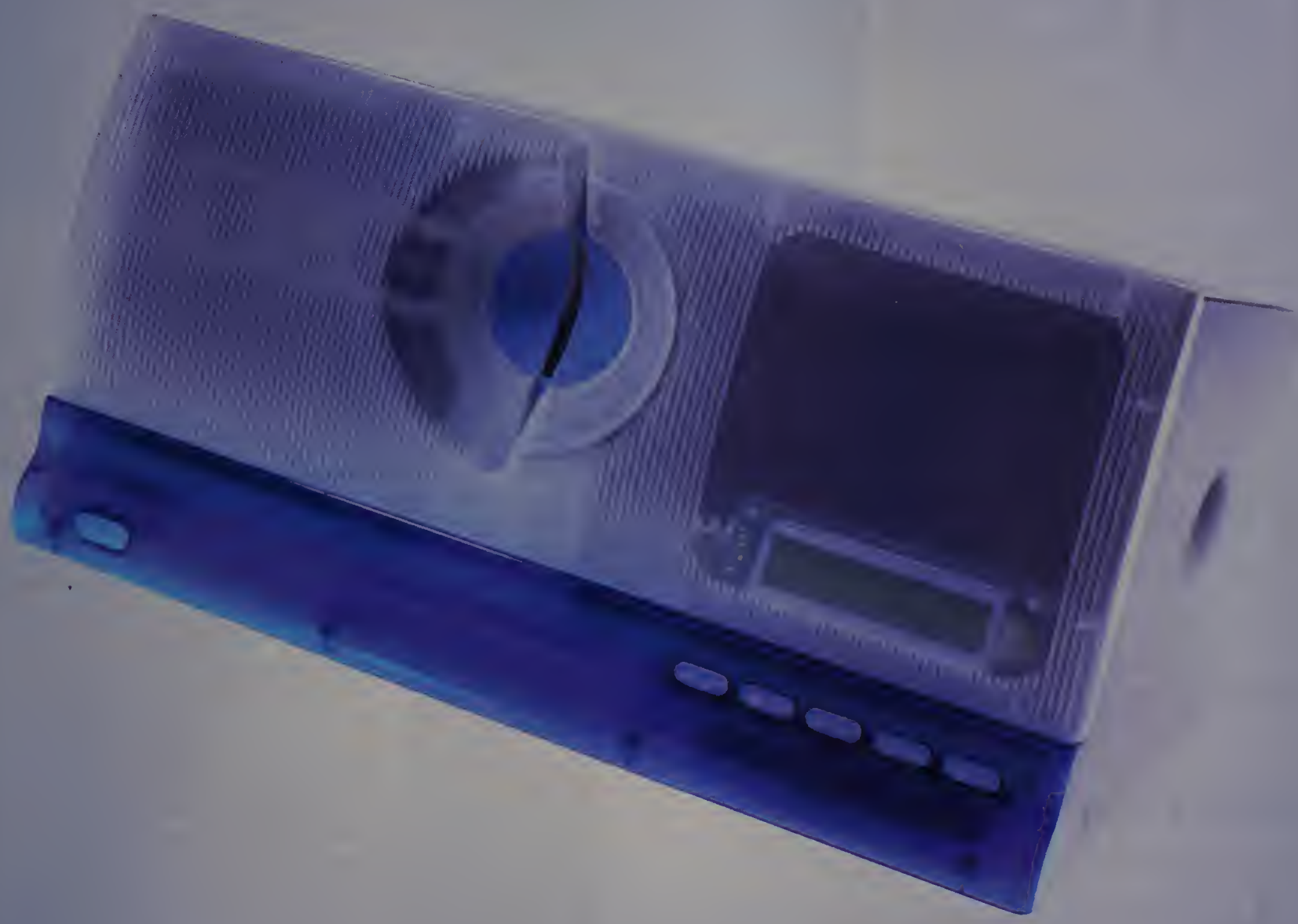
Macworld's Buying Advice

With a basic installation costing close to $1,500, Meeting Maker is not cheap, but it is one of the few choices left to Mac partisans in the multiplatform, multiuser scheduling category. Scaling smoothly from the branch office to the corporate enterprise, the program also handles mobile computing needs with its Palm synchronization. For companies that want to share schedules among Mac, Windows, and Unix machines, Meeting Maker 6 can't be beat.—TOM NEGRINO

RATING: ♦♦♦♦ **PROS:** Excellent scheduling and meeting notification; good Palm synchronization. **CONS:** No client-side time-zone setting; some import problems; dated user interface. **COMPANY:** On Technology (781/487-3300, www.meetingmaker6.com). **COMPANY'S ESTIMATED PRICE:** Server pack, $499; ten-user pack, $950.

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Palm IIIe Organizer

AFFORDABLE ORGANIZER

THE PALM III HANDHELD ORGANIZER built on the success of earlier Palm models with its infrared-beaming capability. The Palm IIIx took things to the next level with an expansion slot and an improved display. However, both came with premium prices that placed them out of reach for most consumers.

The Palm IIIe changes that. Selling for just $199, it lacks the Palm IIIx's expansion slot but features the great display and infrared capability you'll find in its siblings. In addition to a gray model, some U.S. stores are offering a Special Edition, also for $199, that features a transparent case. With the release of the IIIe, Palm has also reduced the IIIx's price from $369 to $299.

So what do you give up with the Palm IIIe? The IIIx's expansion slot provided an extra 2MB of RAM, but unless you need to store large databases, you really don't need all that memory. The IIIe's built-in 2MB of RAM lets you store thousands of contacts and to-do items, with plenty of room left over. The lack of an expansion slot even allows for greater reliability: because there is no expansion slot in the Palm IIIe, there is no RAM card to come loose after repeated bumps and drops.



GIBSON

Our biggest complaint about the Palm IIIe is the stylus. Instead of the IIIx's metal-and-plastic stylus, you get a cheap-looking, solid black plastic model. It's not just a matter of aesthetics: the better stylus's removable top conceals a convenient reset pin, which comes in handy if you run an application that causes the Palm to crash or freeze. Palm offers a $9.95 three-pack of the high-quality styluses, which we recommend.

Although the Palm IIIe includes an infrared port, it currently won't let you synchronize with Palm Desktop software. However, you can use it to exchange files with other Palm organizers, and Palm plans to release a version of its infrared software that will support HotSync operations.

Unlike the well-publicized Visor from Handspring, which features a USB connection, all Palm devices are serial-only, which means you'll need to purchase a USB-to-serial adapter to sync with Mac models that lack a serial port (adapters sell for $35 to $80). Like other Palm handhelds, the Palm IIIe doesn't include Mac-savvy directions, nor does it come with Mac software. However, Palm's MacPac 2 desktop-synchronization software is available for free download from Palm's Web site.

Macworld's Buying Advice The Palm IIIe is a solid handheld organizer based on a proven platform. Handspring's $179 Visor, which includes a USB cradle and Mac software, may seem like a better deal, but until it ships, it's unproven technology. The Palm IIIe simply works, and it does so at a great price.—JEFF PITTELKAU

RATING: ♦♦♦♦ **PROS:** High-contrast screen; affordable. **CONS:** Mac software and serial and USB connections optional. **COMPANY:** Palm Computing (408/326-5000, www.palm.com). **LIST PRICE:** $199.

Adobe Photoshop 5.0 LE

LIMITED EDITION TARGETS MIDRANGE USERS

NOW THERE'S AN ADOBE PHOTOshop for the rest of us: businesspeople, digital-photo hobbyists, even a reviewer's 11-year-old son. Adobe Photoshop 5.0 LE is a $99 graphics tool that falls between Adobe PhotoDeluxe—a low-end image editor bundled with many scanners and digital cameras—and the full Photoshop 5.5. It offers many useful functions you won't find in the former but lacks the extensive feature set and high price tag of the latter.

With Photoshop LE, you can simultaneously open multiple images, apply most Photoshop filters and image-correction operations (including Variations), and employ the same painting and selection tools found in the full version. However, Photoshop LE works only in gray-scale, Indexed Color, and RGB color modes; if you're a print professional who handles CMYK images, you'll need the full version. You can't edit individual color channels or add alpha channels, but using the Layer Mask feature, you can create masks that act like alpha channels. You can generate as many as 99 layers (with variable transparency and multiple blend modes), but you can't apply the full version's layer effects. If you need a drop shadow, you'll have to create it manually or use a third-party plug-in.



Basic Building Blocks Photoshop 5.0 LE provides the same painting tools found in the full version.

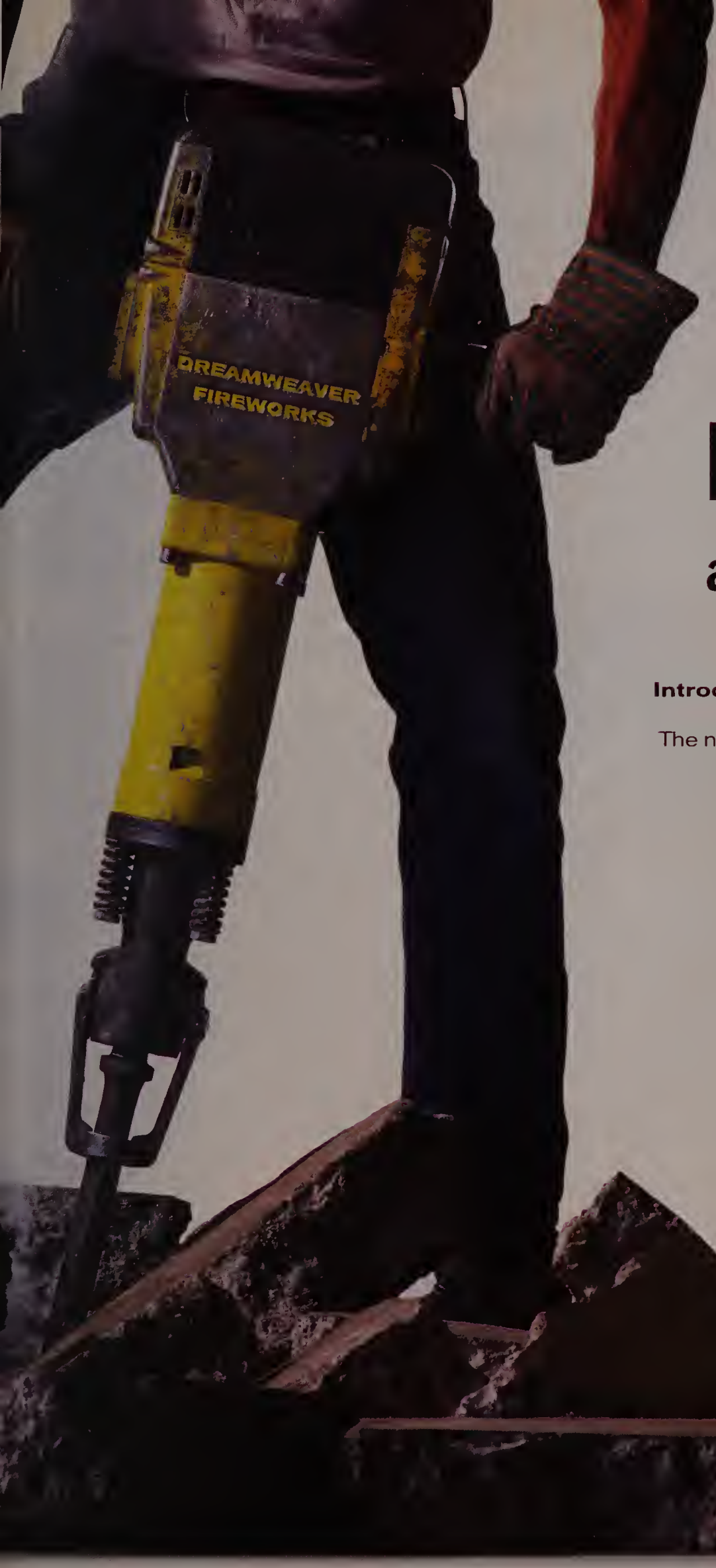
Photoshop LE has a limited Text tool reminiscent of the one in Photoshop 4.0X. When you add text, it is automatically placed on its own layer, making it easier to change opacity or create other effects. However, once you have created the layer, you cannot edit the text. On the plus side, Photoshop LE includes a Type Mask tool that makes it easy to create selection marquees for text outlines.

Also missing from Photoshop LE are Photoshop's History and Actions palettes. Without a History palette, you're limited to one undo, and the lack of an Actions feature means you have to perform repetitive tasks by hand. However, most users who need batch-processing capabilities are probably graphics pros who would be better off with the full version.

Photoshop LE can save files in any format supported by the full version, including PDF and EPS. However, it cannot import Illustrator, PDF, or EPS files, and it lacks Photoshop 5.5's ability to preview and optimize Web graphics.

Macworld's Buying Advice Adobe Photoshop 5.0 LE lacks the full feature set of its high-end sibling, but it still provides robust image-editing features in an affordable and easy-to-use package. If you feel handcuffed by PhotoDeluxe but daunted by the full Photoshop 5.5, give Photoshop LE a close look.—ANDREW SHALAT

RATING: ♦♦♦♦ **PROS:** Same basic tools as full version; affordable. **CONS:** No CMYK support; cannot import EPS or PDF files. **COMPANY:** Adobe Systems (800/833-6687, www.adobe.com). **COMPANY'S ESTIMATED PRICE:** $99.



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HomeFree Phoneline USB

EASY NETWORKING ON THE HOME FRONT

YOUR IMAC OR POWER MAC G3 or G4 includes built-in Ethernet, but that won't do you much good if you don't have a 10BaseT network. HomeFree Phoneline USB allows you to network USB-equipped Macs and PCs—and share Internet connections—using ordinary telephone cabling. Although you may pay more for the privilege of hidden wiring and plug-and-play connectivity, you avoid the hassle of creating an Ethernet network.

The HomeFree consists of a device



SUZANNE ROADY

with one USB jack and two RJ-11 jacks on the back, along with software that allows several networked computers to share files or a single Internet account. Internet-gateway software and a limited version of Miramar Systems' PC MacLAN enable AppleTalk file sharing among PCs and Macs. If all this sounds familiar, it's because the HomeFree duplicates the features of Farallon's $139 HomeLine Starter Kit (see *Reviews*, October 1999), right down to the identical bundled software. Where the HomeLine supports PCI Macs and PCs, however, the HomeFree is exclusively USB.

To get started, just connect a separate HomeFree device to the USB input of each computer you want to network and to your wall jacks, all of which must be wired to the same telephone line. You can then share files as you would over any AppleTalk network. You can also add a PC to the mix.

To add Internet-sharing capability, you must choose a Mac or Windows 98 PC to act as an Internet gateway. Once you've installed the gateway software on that machine, you can connect to the Internet by launching a browser from any computer on the network. The gateway software detects the request, connects to the Internet, and delivers the requested page.

The HomeFree comes with a booklet-size manual, a poster-size Getting Started guide, and lots of PDF files documenting the bundled software. Although the booklet devotes one chapter entirely to Macintosh setup and the poster contains separate sections describing Mac and Windows setup, the Mac installation process is not well explained.

The HomeFree offers two major advantages for home users: you can use the existing phone wires already hidden within your walls, and it includes software for sharing files and printers with a networked PC. But for about the price of one HomeFree, you could buy an Ethernet hub, network your 10BaseT computers, and save the cost of buying adapters for each computer (although you'd need some file-sharing software to add PCs and you'd most likely still have to pay for Internet access by the computer).

Macworld's Buying Advice

For those who need to network more than three computers that are reasonably close together, Ethernet is less expensive and easier to work with than a HomeFree Phoneline USB network. But if you have only a few computers (especially ones that are widely dispersed) or if you want to share files or Internet access between a Mac and a PC, the HomeFree is worth the cost. And the per-user price of the HomeFree is comparable to that of Farallon's HomeLine Starter Kit, which includes two PCI adapters. You can even mix and match the two on a single network if you want to add a non-USB computer.—SHELLY BRISBIN

RATING: ♦♦♦½ **PROS:** Takes advantage of existing home wiring; easy to set up. **CONS:** Misleading documentation; expensive for networks of three or more computers. **COMPANY:** Diamond Multimedia (800/468-5846, www.diamondmm.com). **COMPANY'S ESTIMATED PRICE:** $70.

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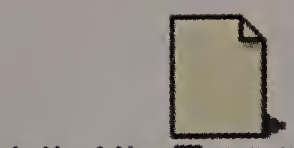
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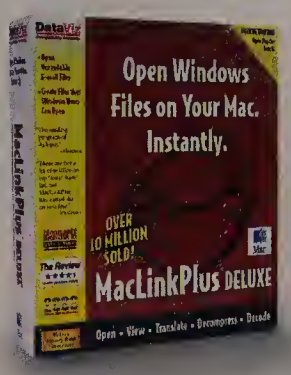
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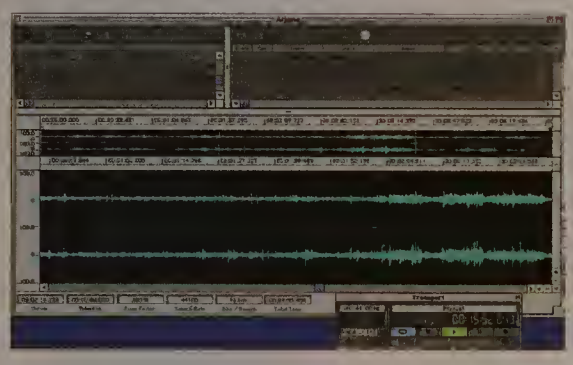
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Spark

AUDIO EDITOR OFFERS MORE—AND LESS

A NEW PLAYER HAS ENTERED the professional two-track digital-audio–editing arena: Spark 1.01, from TC Works. Unlike its competitor Berkeley Integrated Audio Software's Peak, Spark is intended to be a complete audio-mastering solution rather than a powerful, general-purpose audio editor. Lending credence to this claim are many of Spark's features: an expansive effects matrix that supports the industry-standard Virtual Studio Technology (VST) effects plug-ins, direct export of playlists to Adaptec's Jam and Toast CD-R–writing applications, and support for third-party audio cards. But as impressive as these features are, Spark could learn a thing or two from Peak.



Seeing Spark Spark's intuitive interface makes it easy to edit audio regions and add them to playlists.

Spark's interface is a model of efficiency. From within the program's Browser View window, you manage audio files and playlists and edit waveforms. The Transport window contains controls for playing, pausing, and recording audio files, as well as the Jog Shuttle wheel, which controls audio scrubbing, time stretching, and variable playback speed. To add new audio files to Spark, you either click on the Add button and select a new file from the resulting dialog box or drag and drop files into the Files portion of the Browser View window. Adding an audio region to a playlist is as simple as dragging the region from the File View section to the Playlist View section. From there you can change the volume and impose crossfades between regions. With a click on the Create CD button, regions are saved and opened in Jam or Toast (the latter is bundled with Spark).

The Master window is your gateway to Spark's impressive signal-processing capabilities. In this window, you can route audio through up to five VST-compatible plug-in effects in a series, one after the other. At the same time, you can run four of these serial streams in parallel. Running 15 or 20 effects will overwhelm even the most powerful G4; thankfully, the Master window also displays a gauge that indicates how much CPU power your current effects configuration demands. Spark includes some suitable VST effects, including a collection of EQs, filters, and a reasonable reverb. Effects unlikely to be used on a master recording—chorus and flange, for example—aren't included.

Like all of today's other professional digital-audio/MIDI–sequencer applications, Spark supports Steinberg's ASIO and Digidesign's Direct I/O protocols, allowing you to use high-quality audio cards from such companies as Digidesign, MOTU, Korg, and Emagic. Spark also lets you swap audio data between your Mac and a sampler through MIDI and SCSI.

Although Spark handles mastering well, sampler users who depend on their audio editor to make seamless loops may prefer Peak. Unlike Peak, Spark has no function for automatically locating desirable loop points. Those who have become accustomed to Peak's unlimited-undo feature will likewise be disappointed with Spark's inability to undo more than the last command. And although Spark lets you create crossfades, the program lacks an easy way to preview them. Finally, TC Works' copy-protection measures are unlikely to please anyone. We waited more than a week for a response code that allowed us to use Spark on a floppy-drive–less Power Mac G3.

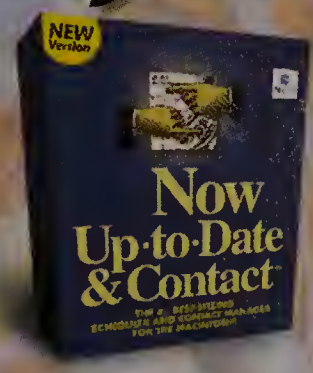
Macworld's Buying Advice

Spark 1.01 is a capable audio editor that is particularly useful for its intended purpose, audio mastering. With a high-quality sound card, a fast Mac, and a solid collection of premium VST plug-ins, you can turn out impressive results with this software. But Spark won't be at its peak until it duplicates the best of Peak's functions: loop location, unlimited undo, and crossfade preview.—CHRISTOPHER BREEN

RATING: 3½ **PROS:** Clean interface; powerful effects processing. **CONS:** Copy protection; lacks automatic loop-point selection; no crossfade preview. **COMPANY:** TC Works (805/373-1828, www.tcworks.de). **LIST PRICE:** $499.

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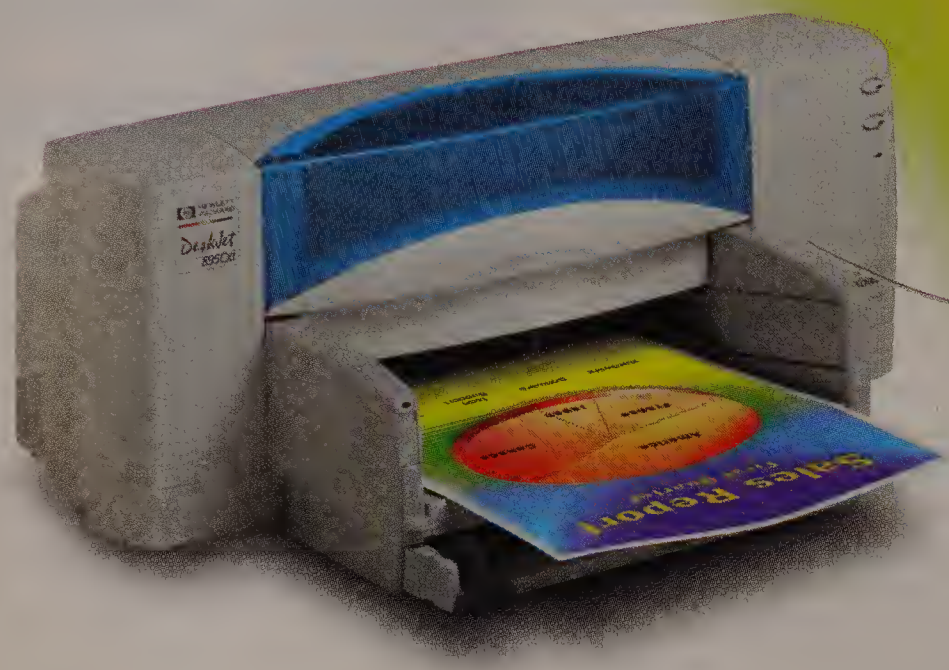
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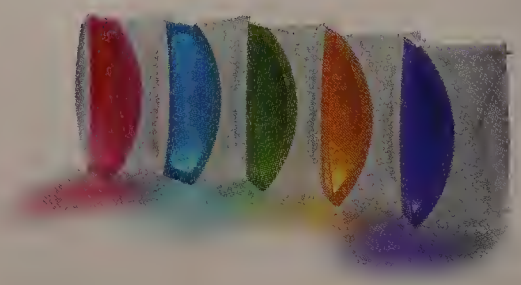


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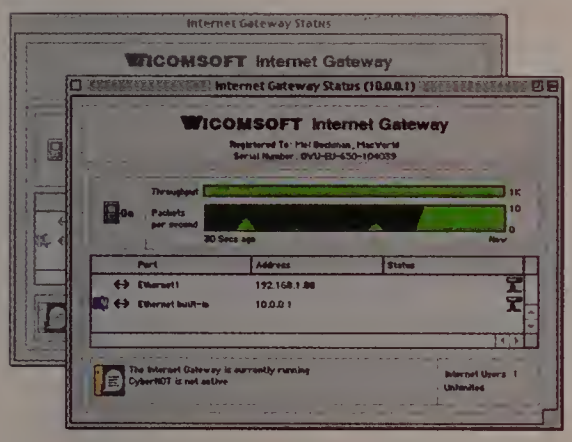
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Internet-Sharing Software

INTERNET GATEWAY, IPNETROUTER IMPROVE HIGH-SPEED INTERNET SHARING

HIGH-SPEED INTERNET CONnections, such as cable-modem and DSL lines, are becoming commonplace both at home and in small businesses. Unlike modems, which top out at 56 Kbps, these newer connection options run at multiple megabits per second. That's far more bandwidth than one user needs on a continuous basis, making such connections perfect for sharing among several users. Vicomsoft's Internet Gateway 6.5 and Sustainable Softworks' IPNetRouter 1.4.2 allow sharing with no additional hardware. IPNetRouter does it on the cheap, whereas Internet Gateway offers access controls many small businesses need for managing their networks.



Control Freak Vicomsoft Internet Gateway 6.5's remote console lets you control multiple gateways from anywhere in the world.

Each product can share dial-up connections (via modem or ISDN) or dedicated connections such as DSL. Both offer network-address translation, dynamic IP-address assignment via DHCP, multihomed Web serving, IP filtering, firewall protection, and dial-on-demand for nondedicated connections. You'll find both products easy to set up and configure, although Internet Gateway's comprehensive user manual is vastly superior to IPNetRouter's primitive read-me files.

Internet Gateway goes far beyond these basic features, but you pay for its capabilities on a per-user basis. Sustainable Softworks charges one low price for an unlimited number of users, but Internet Gateway offers features that work well for medium to large user populations: Web caching, a TCP-server locator, remote administration, and dynamic DNS. Internet Gateway's access-list feature lets you control who does what on the Internet, and CyberNot filtering prevents surfing to inappropriate sites. Telecommuters can dial in at the same time the gateway is routing traffic to the Internet; this capability lets you act as a private ISP for your employees.

IPNetRouter isn't without its advantages, however. It passes Microsoft's Point to Point Tunneling Protocol transparently, making virtual private networking practical; supports MacIP—TCP/IP encapsulated in AppleTalk—so that non-Ethernet Macs can share Internet access; and can operate as an invisible background application. Internet Gateway has none of these features.

In our tests, both products worked well, once installed and configured. Internet Gateway's superior documentation eases adniinistration chores, and its user interface is generally easier to understand.

Macworld's Buying Advice

If you're lucky enough to have fat Internet pipes and are looking for a way to spread the wealth, one of these products is for you. Internet Gateway 6.5 works well in business environments that can afford to spend around $50 per networked user, whereas anyone on a stricter budget will welcome IPNetRouter 1.4.2's economical price.—MEL BECKMAN

Internet Gateway 6.5

RATING: ♦♦♦♦ **PROS:** Excellent documentation; network-address translation and DHCP; content filtering; remote administration; dial-in access. **CONS:** Per-user pricing. **COMPANY:** Vicomsoft (800/818-4266, www.vicomsoft.com). **LIST PRICE:** Five users, $249; ten users, $430; unlimited users, $730.

IPNetRouter 1.4.2

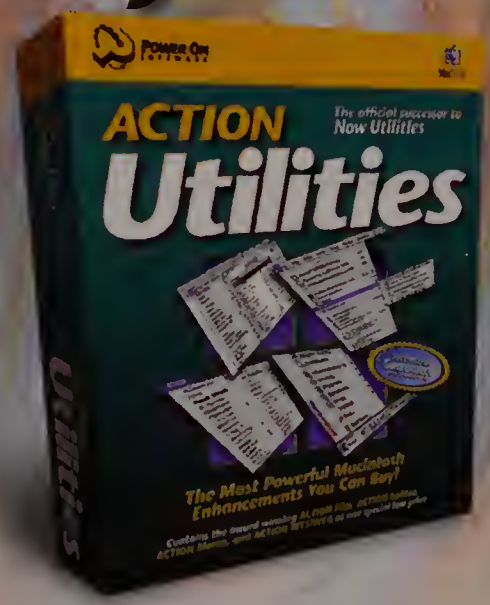
RATING: ♦♦♦ **PROS:** Inexpensive; network-address translation and DHCP. **CONS:** No dial-in access; limited administrative features; no telephone tech support. **COMPANY:** Sustainable Softworks (support@sustworks.com, www.sustworks.com). **LIST PRICE:** $89.

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SprintScan 4000

FILM SCANNER'S SOFTWARE BEEFS UP


GIBSON

WHEN WE FIRST LOOKED AT Polaroid's SprintScan 4000, we concluded that it was a decent piece of hardware hampered by nearly unusable software (see "Slide Scanners Show Off," September 1999). We're happy to report that the updated PolaColor Insight, although still imperfect, makes the SprintScan 4000 a serious contender among midrange 35mm film scanners.

PolaColor Insight 3.5's predecessor, version 3.0, had several problems. Unlike other scanning packages, it didn't process data from the scanner in real time; instead, it scanned the raw image to a scratch file and then applied any corrections made in the prescan, resulting in very slow scanning. Color-management features were sorely lacking, and you couldn't get scans into an Adobe Photoshop working space without doing many image-degrading conversions on a 24-bit file.

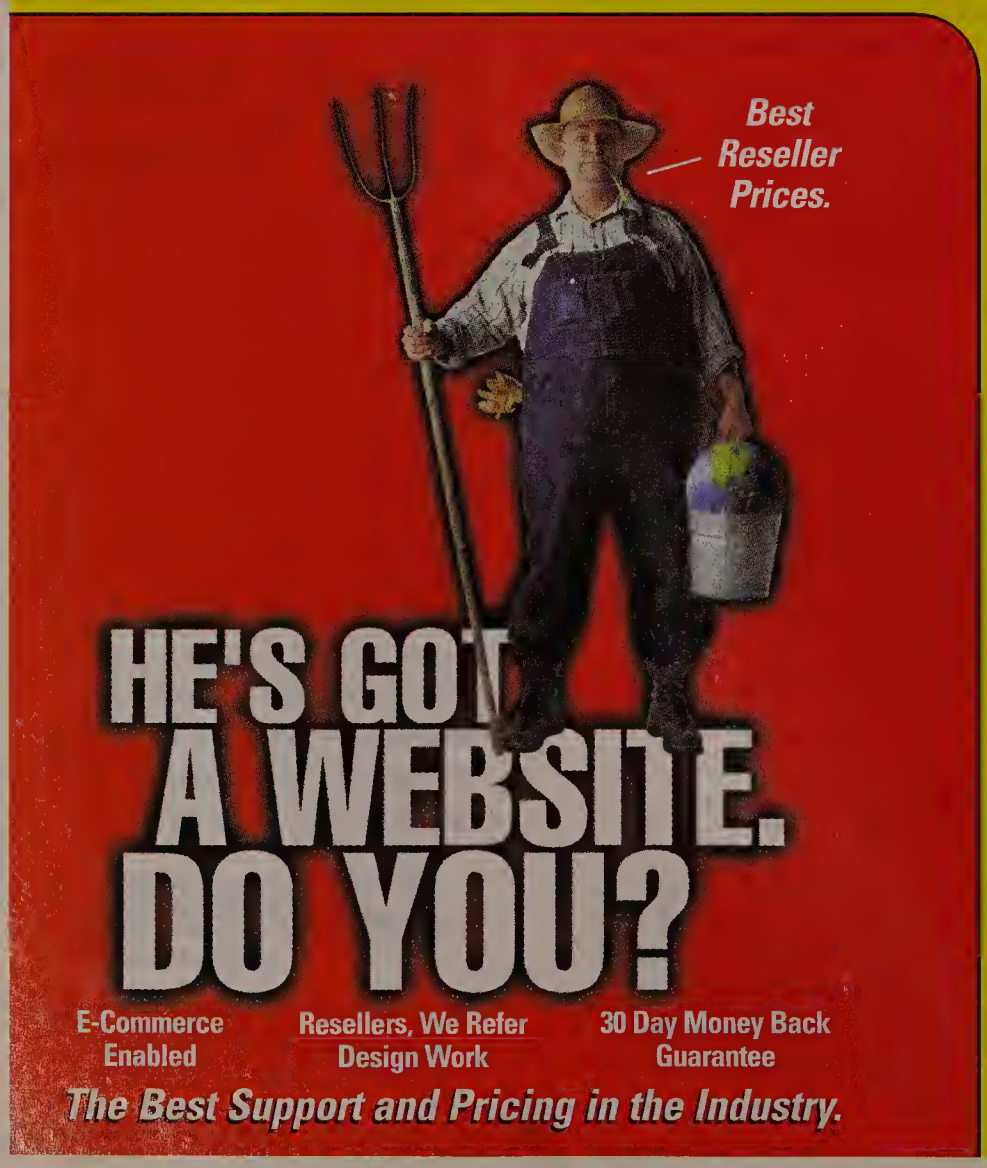
Although the SprintScan still scans to a scratch file, Insight 3.5 adjusts the image while writing to that file. As a result, the process is a great deal faster: on a 400MHz Power Macintosh G3 with Fast SCSI-2, scanning a full-frame, 4,000-dpi, 36-bit image took slightly over two minutes.

The color-management improvements are less obvious. You can now capture raw 36-bit scanner data and open it in Photoshop, but Insight still takes a passive-aggressive approach to ColorSync color matching. It ships with input profiles for various film types and lets you load a monitor profile, but it uses its own profiles folder rather than the ColorSync profiles folder; you need to copy your monitor's profile to Insight's folder. Also, Insight still can't scan to a Photoshop working space while displaying the image correctly on the monitor. Instead, Polaroid recommends scanning to monitor RGB, embedding the monitor profile, and then converting the file to Photoshop's working space when you open it in the image editor, meaning that you lose some information.

Although PolaColor Insight still needs improvement, version 3.5 is a step in the right direction. We were able to get excellent scans by opening a raw, high-bit file in Photoshop and converting it to the Photoshop working space, and we got pretty good scans when we used Polaroid's recommended workflow. The dynamic range of 3.4 seems conservative—starting with high-contrast slides, we obtained results with shadow detail comparable to that in scans from scanners with a quoted dynamic range of 3.6—and at 4,000 dpi, the scanner offers the highest resolution in its class.

Macworld's Buying Advice The SprintScan 4000 hardware is respectable, and although it still deserves better software to drive it, PolaColor Insight 3.5 is a huge improvement over its predecessor. If you don't mind jumping through a few hoops, you'll find that the SprintScan 4000 delivers impressive results. And Polaroid just dropped the price by $500, making it a good value to boot.—BRUCE FRASER

RATING: ♦♦♦♦ **PROS:** Fast; good dynamic range; highest resolution in its class. **CONS:** Software could still use some work. **COMPANY:** Polaroid (800/432-5355, www.polaroid.com). **LIST PRICE:** $1,995.



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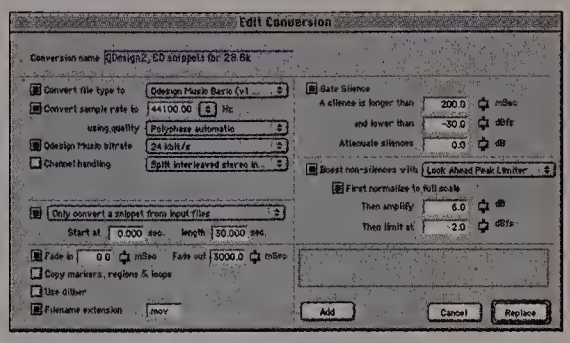
BarbaBatch 3.0

EFFECTIVE AUDIO CONVERSION

FROM OUTWARD APPEARANCES, the latest version of Audio Ease's professional audio-conversion utility, BarbaBatch 3.0, seems hardly different from the last version, and BarbaBatch continues to produce the finest-sounding conversions on the Mac. Converting audio files is still a simple four-step process—add files to the Input window, determine the formats you'd like your files converted to, select a destination folder for your processed files, and click on the Start button. Beneath the surface, however, version 3.0 sports some dynamic new features that are sure to appeal to those who use audio in their multimedia, sound-design, and Web work.

BarbaBatch's most obvious improvement is the number of file types it supports. In addition to supporting the same wealth of file types as version 2.5.2, BarbaBatch 3.0 can convert files to all the formats QuickTime 4.0 supports, including the basic and professional editions of QDesign Music Encoder 2.0. BarbaBatch also supports RealNetworks' SureStream and Singlerate formats for the G2 player. If you're willing to spend $99 for Fraunhofer's MP3 encoder, you can also convert your audio files to MP3s. Regrettably, BarbaBatch can't convert any variety of MPEG or RealAudio file to another format. Another drawback: the program is still copy-protected.

Because the latest version of BarbaBatch is compatible with Apple's Navigation Services, you can now add multiple files to the Input window by clicking on the Add button and then, in the dialog box that appears, shift-clicking on the files you'd like to add. Of course, you can still easily add files and folders to the Input window by dragging and dropping them. BarbaBatch 3.0 also adds an AppleScript command for executing batch-processing requests.



Totally Batchin' BarbaBatch 3.0 offers conversion options that are quite extensive.

Using BarbaBatch (with the Fraunhofer encoder) simply to encode MP3 files would be not only a waste of the program's extensive conversion capabilities but also an indication of how poky it can be with certain types of files. Although BarbaBatch creates some of the best-sounding MP3s we've heard, it takes a long time to do so. On a 450MHz Power Mac G3, BarbaBatch took more than 20 minutes to rip a 33.3MB AIFF file at 128 Kbps (the highest quality). At the same settings, Xing's Audio Catalyst took just over a minute. Thankfully, this disparity isn't as broad with all file types. Importing an audio-CD track and compressing it with the QDesign Music Encoder, for example, took just 10 seconds longer with BarbaBatch than with QuickTime Player.

Macworld's Buying Advice If you're looking for the cleanest conversion of your audio files and an easy way to convert multiple files in one fell swoop, you'll find BarbaBatch 3.0 unmatched by any other Macintosh utility. The trade-off is longer processing times for certain file types—a compromise most audio professionals will gladly make.—CHRISTOPHER BREEN

RATING: ♦♦♦♦ **PROS:** Outstanding audio output; easy to use. **CONS:** Can't convert MP3 and RealAudio files; can be slow. **COMPANY:** Audio Ease; distributed by MacSourcery (800/622-7723, www.macsourcery.com). **LIST PRICE:** $395.



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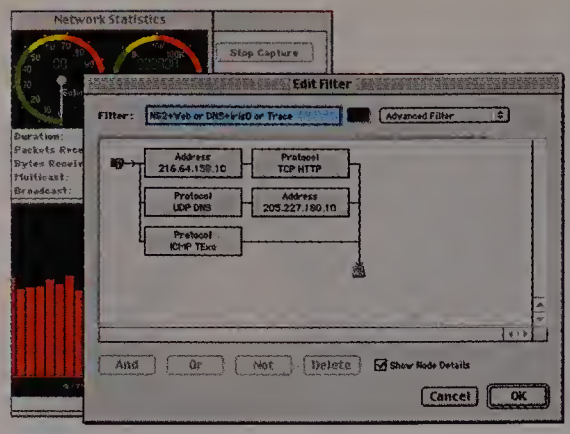
EtherPeek 4.0

NETWORK ANALYZER GETS SELECTIVE

BACK IN THE DAYS OF 10-MBPS Ethernet, you debugged network problems by sipping traffic from your network, using a trusty network analyzer, and then retiring to a quiet corner to digest the accumulated data. But tapping into today's networks, with their 100-Mbps Ethernet cards and gigabit backbones, is like drinking from a fire hose; a network spews too much data in just a few seconds to allow human manipulation. AG Group's EtherPeek 4.0 lets you selectively capture just the packets related to a particular problem. Other enhancements and new features help EtherPeek retain its position as a big fish in a sea of network tools.

EtherPeek works by taking over an Ethernet card in your Mac and using it to capture packets, decode them, and display them for your perusal. The program comes with an array of plug-in modules that perform some analysis chores for you, including logging HTTP requests, detecting hacker attacks, and decoding mail and Telnet sessions. EtherPeek can also pipe output to a Web server for remote viewing.

Version 4.0 overhauls EtherPeek's user interface, giving you the ability to sort traffic by various attributes and open multiple capture windows. You can also display various analytical views of the traffic, such as packet-size distribution, throughput history, and statistics for individual conversations and logical nodes. A new Global Statistics graph monitors the overall network usage and data rate in packets per second.



Picky Peeker EtherPeek 4.0's new tool for selective packet filtering lets you create filters using AND, OR, and NOT logical constructions.

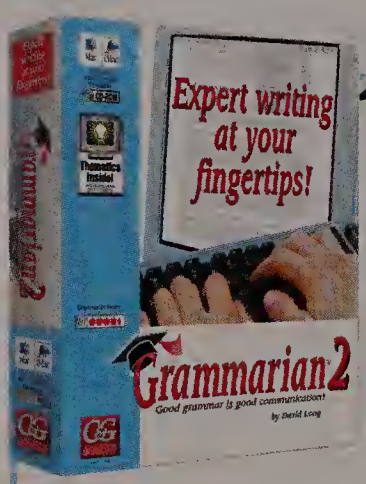
All these features help you distill the essence of captured data more quickly, but one of the most time-consuming analysis chores—even when automated by EtherPeek—has been matching numeric addresses with symbolic names. This version speeds name resolution by using DNS-resolution requests captured from the network to populate EtherPeek's internal name tables.

The most powerful new feature, though, is a new selective-filtering capability that lets you choose which packets are captured based on AND, OR, and NOT logic rather than a simple selection mask. This selectivity is essential for capturing data from busy backbone data streams.

AG Group decided to cut anchor on 680X0 machines with this release, supporting only PowerPC processors, the most recent Ethernet cards, and Mac OS 8.0 or later. However, the package includes a backward-compatible capture tool that lets you capture traffic on previously supported platforms for postmortem analysis.

Macworld's Buying Advice EtherPeek remains the king of network analyzers, on both the Mac and the PC. The latest wave of improvements in version 4.0 helps the product keep up with the ever rising tide of network traffic.—MEL BECKMAN

RATING: ★★★★½ **PROS:** Selective filtering mechanisms; network performance meters; HTML output; comprehensive protocol support; sophisticated plug-in analyzers; fast name resolution. **CONS:** None. **COMPANY:** AG Group (800/466-2447, www.aggroup.com). **LIST PRICE:** $995.



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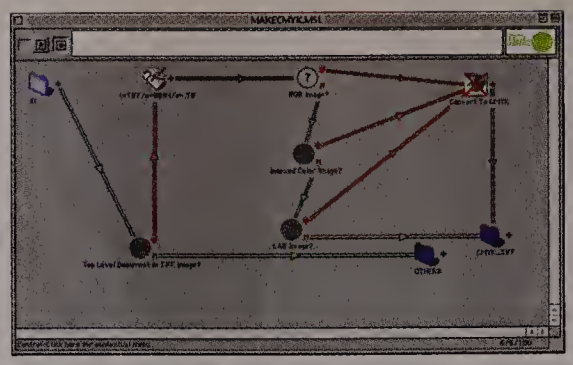
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MarkzScout

GRAPHICS WORKFLOW TOOL

WORKFLOW MANAGEMENT IS the current rage in graphics software, as developers look to automate various aspects of print and Web production. MarkzScout 1.0 takes a unique approach to workflow automation by providing customizable tools for inspecting, sorting, and processing graphics files. If you deal with large volumes of files and are willing to spend some time learning the program's intricacies, MarkzScout could be the ticket to greater productivity.

MarkzScout consists of small programs called Checkpoints and Actionpoints that can look inside PostScript, PDF, and HTML files, as well as native files created in most popular graphics programs. A Checkpoint inspects a file for a certain attribute, such as embedded JPEG images, then returns a yes or no depending on whether that attribute is present. An Actionpoint performs an action on the file, such as generating a list of spot colors. You can also use Actionpoints to launch an application, run a Photoshop Action, or perform preflight operations with Markzware's separate FlightCheck software.



Graphics Pipeline MarkzScout lets you sort and inspect files by linking Checkpoints and Actionpoints in a customized layout.

By linking Checkpoints and Actionpoints within a MarkzScout layout, you can easily sort files and generate useful information about their contents. Creating a layout is easy: you add Checkpoints and Actionpoints, then drag a connector to link them. It's also easy to create basic Checkpoints and Actionpoints, but for complex points you'll need to master MarkzScout's built-in scripting language. For example, you would have to write a MarkzScout script if you wanted to determine whether to set a QuarkXPress document for color or gray-scale printing.

MarkzScout scripts can include the full range of programming expressions such as variables, arrays, and conditional branches. The commands allow nearly complete access to a document's contents, including information about type styles, colors, and print settings. However, aside from its support for Photoshop Actions, MarkzScout provides very limited built-in features for modifying a file.

The MarkzScout reference guide lists every scripting command, but the skimpy descriptions offer no examples of how to use the commands in a script. The program also lacks support for AppleScript, which would make MarkzScout more valuable by letting you automate QuarkXPress operations in addition to Photoshop Actions.

Macworld's Buying Advice MarkzScout 1.0 is a useful tool for managing native graphics files. The program would be more valuable if it included better documentation and supported AppleScript. Even in its present form, it gives you a relatively painless way to create file-inspection workflows customized to the way you do business.—STEPHEN BEALE

RATING: ♦♦♦½ **PROS:** Customizable features for inspecting and sorting files; works with native file formats. **CONS:** Poor documentation; no AppleScript support. **COMPANY:** Markzware (949/756-5100, www.markzware.com). **COMPANY'S ESTIMATED PRICE:** $799.

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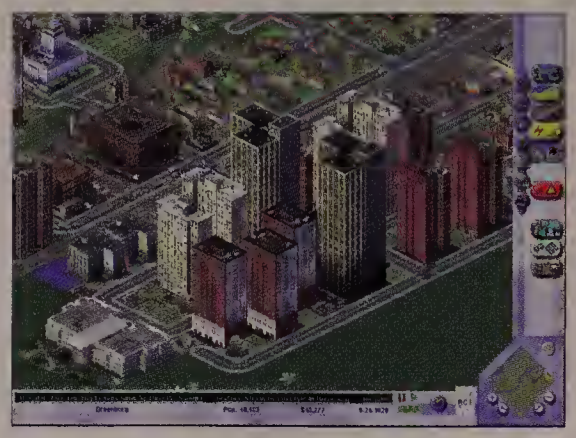
SimCity 3000

CLEANER CITIES, NO URBAN RENEWAL

MAC USERS REMEMBER FEW games more fondly than Maxis's original city simulator, SimCity. This delightful toy allowed those with delusions of grandeur to design, build, and run their own metropolises. SimCity 3000, the latest spawn of the original, comes to the Mac bearing improved graphics, waste-management responsibilities, intercourse between neighboring cities, and a Windows-like interface.

SimCity veterans will feel completely at home with the new version. All the usual elements are available: a Landscape button, for changing the countryside's elevation; a Zone button, for creating light, medium, and dense residential, commercial, and industrial zones; a Build Transportation button, for laying down roads and rail; a Build Utilities button, for adding power and water; and buttons for placing civic buildings (schools, police stations, and hospitals, for example). You can also call upon advisors who offer their two bits on various issues that affect your city.

As in any other version of SimCity, your job is to lay down zones, transportation, power, and water in such a way that people will want to inhabit your burg. To keep them there, you must maintain a reasonable tax rate; provide adequate police, fire, health, and educational services; and avoid choking the town with traffic and pollution. Your rewards for sustaining a prosperous city come in the form of special structures—a mayoral mansion or a statue, for example. SimCity 3000 also includes landmark buildings you can add to your city. These landmarks, like everything else in the game, are beautifully rendered.



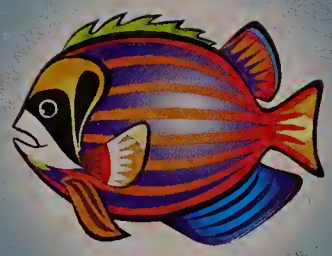
Sim-ply Beautiful SimCity 3000's spiffy new graphics add to the original's charm.

The biggest changes in SimCity 3000 are the waste-management responsibilities and the relationships with neighboring cities. Every city generates trash, and your SimCity is no different. You must deal with the trash created, or your city becomes smothered with garbage and the population flees. Your neighbors may offer to take your garbage—for a fee, of course—if you haven't zoned enough space for it. If you have loads of dumping ground, other cities can pay you to take their trash. Neighboring towns offer power and water deals as well.

Although these new elements enhance an already enchanting simulation, some users may be disappointed that SimCity 3000 adds few other new features. In many ways, SimCity 3000 is little more than SimCity 2000 with a very successful face-lift. And Mac users accustomed to a Mac interface will likewise be disappointed with SimCity 3000's Windows look—complete with a chunky, white arrow cursor and Windows-style folder navigation.

Macworld's Buying Advice Those new to SimCity will delight in the latest version. If you're content with SimCity 2000 and can live without a prettier version, wait for SimCity 4000.—CHRISTOPHER BREEN

RATING: ♦♦♦♦ **PROS:** Beautifully rendered; usual SimCity charm. **CONS:** Windows-like interface. **COMPANY:** Electronic Arts (800/245-4525, www.simcity.com). **LIST PRICE:** $50.





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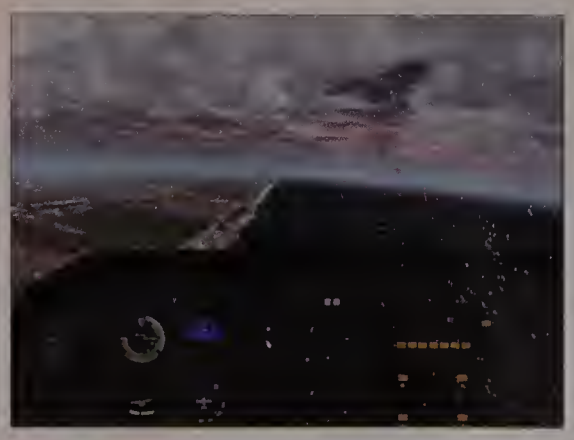
FUN FLIGHT SIM PUSHES HARDWARE

MAC FLIGHT ENTHUSIASTS finally have an affordable general-aviation (GA) simulator to call their own, thanks to Fly 1.0, from Terminal Reality and Gathering of Developers. And, mostly, Fly succeeds remarkably well for a first effort. Its realism and beautifully rendered skies make for fun flights, although harsh hardware requirements and bugs result in some turbulence.

All the critical elements of general-aviation flight are in Fly, from planning to en route air-traffic control to touchdown. The Flight Planner lets you select departure and arrival airports from more than 9,000 facilities worldwide; add or delete way points; and load fuel, passengers, and baggage.

You have five aircraft at your disposal, including the venerable Cessna 172 and the Hawker 800XP business-class jet. Fly's 3-D cockpits incorporate almost all the working controls found in a real aircraft. Thankfully, Fly provides keyboard shortcuts for many controls, so you don't always have to reach for the mouse.

Although you can fly all over the world, detailed scenery is provided only for Los Angeles, San Francisco, Chicago, Dallas–Fort Worth, and New York. In other areas, some major landmarks, including the Grand Canyon, are barely recognizable. Even within the five detailed areas, ground features—apart from airports and scattered buildings—tend to look blurry below a few thousand feet.



Sunset Beach Fly beautifully renders a sunset over Los Angeles.

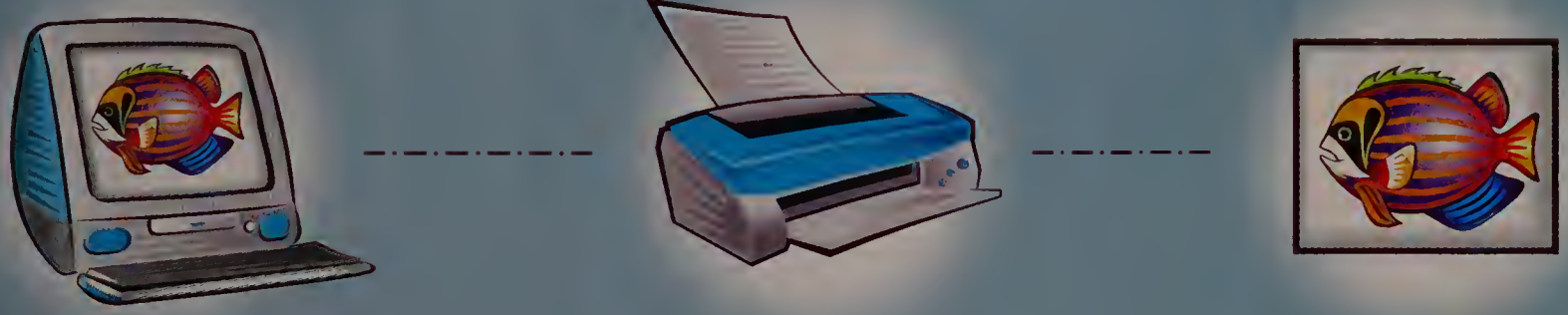
Fortunately, Fly's sky effects, which include 3-D clouds, haze, lens flare, and precipitation, are stunning enough to make you overlook the terrain. And you can fly through real-world weather conditions by importing weather data from the National Oceanic and Atmospheric Administration's Web site (http://weather.noaa.gov/weather/metar.shtml).

As you might expect, all this realism demands a lot of computing horsepower. A complete Fly installation gobbles up 1.6GB, and the application requires a *minimum* of 70MB of RAM. On a blue Power Mac G3/400 with a stock ATI Rage 128 video card, frame rates usually hovered in the high teens or twenties. Users with slower CPUs and older video cards report performance ranging from abysmal to acceptable.

Fly's initial release is also marred by bugs, which run the gamut from annoying to serious; patches should be available by the time you read this. Fly's extensible architecture provides encouragement for the future. The flight-sim community has already begun to produce promising add-ons.

Macworld's Buying Advice Despite its problems, Fly is a blast. And with no other comparably priced GA flight sim on the horizon, it's the only game in town. If you're looking for a kick-in-the-pants flying experience—and you have the hardware to handle it—give Fly a spin.—FRANKLIN TESSLER

RATING: ♦♦♦½ **PROS:** Detailed, working cockpits; stunning sky effects; extensible. **CONS:** Bugs; demanding hardware requirements; limited scenery. **COMPANY:** Gathering of Developers (877/463-4263, www.iflytri.com). **LIST PRICE:** $50.



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The Game Room

It's a Wrap

THE TOP 10 MAC GAMING THINGIES OF THE PAST 1,000 YEARS

by Christopher Breen

Attempting to set a proper example, I've taken no special precautions for the flip of the millennial odometer—no crates of Costco goods shoved into the crawl space beneath my dwelling, no stacks of cash sewn into my mattress, and no extra trips to my Chosen Place of Worship in case it turns out that the All Knowing operates on the Gregorian (rather than the Julian, Mayan, Chinese, or fiscal) calendar. I have made one concession to the year double-aught, however. In the tradition of journalists everywhere, I feel it's my duty to offer a summing up—not of the past year, but rather of the past thousand years.

Admittedly, the first 983 years of the passing millennium offered little in the way of Mac gaming. I prefer to think of those years as the Preparation Age—a period in which the fates conspired to create history interesting enough to form the basis of computer games. After all, without the Renaissance, the entire DaVinci's-studio puzzle would be missing from Presto Studios' Journeyman Project II. Where would Sid Meier and his many world-building sims be without Gettysburg and the Age of Exploration? And could id Software possibly exist without the excesses of the Spanish Inquisition?

So, without further ado, allow me to present this, my first and—unless those multivitamins I've been swallowing work *remarkably* well—last Top 10 Mac Gaming Thingies of the Millennium.



Infocom

I'd like to say that I was there at the very beginning—buying Finder coauthor Steve Capps's Alice (later included in a sumptuously packaged collection called Through the Looking Glass), the first Mac game and the only game ever sold under the Apple label. I wasn't. Like many early Mac gamers, I first played text adventures created by Infocom. Members of MIT's Dynamic Modeling Group launched Infocom in the late 1970s and created such marvelous interactive tales as the Zork series; Planetfall; and my personal favorite, Leather Goddesses of Phobos. There was absolutely nothing Mac-like about their interfaces, of course, but these games clearly demonstrated that I could waste a colossal amount of time with my Mac and regret nary a second of it.

Déjà Vu: A Nightmare Come True

This detective adventure from Mindscape was one of the first games to effectively combine the best elements of interactive fiction with the graphical components of the Mac's unique user interface. To use the items found scattered throughout the game's environment, you clicked and dragged them to an inventory window, where a simple double-click revealed their contents. This concept may sound hackneyed now, but at the time it was revolutionary—certainly something that was impossible on a PC.

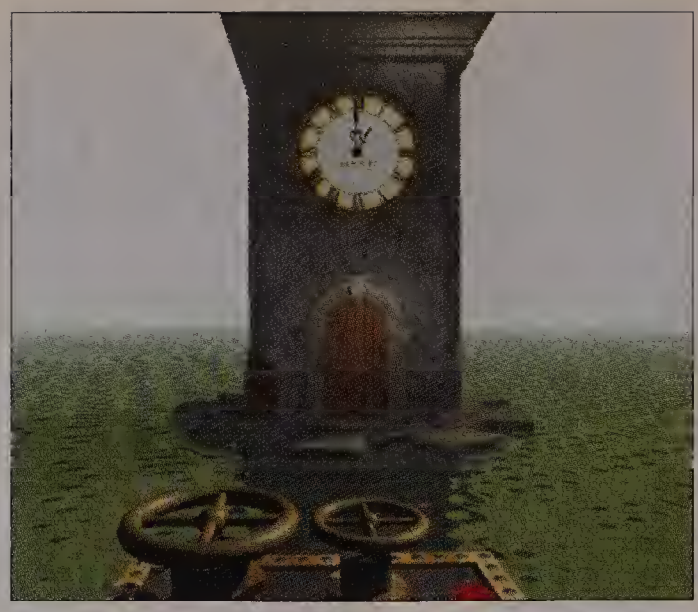
Dark Castle

Speaking of impossible PC tricks, many have forgotten that for over a decade, the Mac's graphics absolutely crushed anything the PC could offer. And no game more clearly demonstrated this disparity than Silicon Beach's Dark Castle. Not only was this achingly addictive, leap-about-and-oh-dammit-there's-another-rabid-rat-and-arrow-flinging-robot arcade game beautiful, but it was also a kick to play. As a matter of fact, the game was so good that Delta Tao brought it back and colorized it a few years ago. Old-timers and new gamers alike should head for Delta Tao's Web site (www.deltatao.com) to check it out.

Balance of Power

In an interview for a book I cowrote a couple of years ago, *The Macintosh Bible Guide to Games* (Peachpit Press, 1996), veteran game programmer Chris Crawford remarked, "*Macworld* magazine never ran a story on Balance of Power, even though it was a huge seller and very strong on the Mac." Better late than never. Mr. Crawford's Balance of Power demonstrated that the Mac's computational muscle and GUI could be used to create a compelling, thinking person's

continues



Myst The first CD-ROM game to get it right.

game. Set in the Cold War era of the time, Balance of Power placed you in the hot seat of international diplomacy, letting you negotiate among nations in an effort to avoid the ultimate endgame—nuclear annihilation.

The Colony

Long before id Software's John Carmack ever dreamed of owning a family of Ferraris, a first-person action-adventure game appeared for Mac—David Smith's The Colony. This wire-frame game placed you in an off-world laboratory taken over by menacing eyeball creatures. Sure, it may sound laughable, but back then in the era of hardware-accelerated 3-D action games based products were attractive, they were dreadful games. It took a Mac-only CD-ROM title to show the rest of the gaming world the potential of these newfangled, silvery discs. That title was, of course, Cyan's Myst, a CD-ROM game that—quite simply—got it right. The graphics were opulent, the music was properly atmospheric, the puzzles were challenging without being unfair, and the story line enticed. For many players, Myst *became* their world.



Pathways into Darkness This first-person shooter was ahead of its time.

The Colony was scarily real. And unlike today's shooters, it required more than a deft trigger finger to complete.

Casady & Greene

New Mac gamers are likely to be confused by my inclusion of a company that's currently known for its highly regarded extensions manager and MP3 utility. But at one time Casady & Greene produced the most "Mac-ish" games on the Mac. These games, written mostly by Patrick Buckland and john calhoun, celebrated the oddball spirit of the Mac by including hysterical sound effects, goofy graphics, and a slew of bizarre characters. Buckland's Crystal Quest and Sky Shadow and calhoun's paper-airplane puzzle game, Glider, were among the best games of their time. Another C&G game, Mission: Thunderbolt, a dungeon-exploration adventure, will always hold a special place in my heart.

Myst

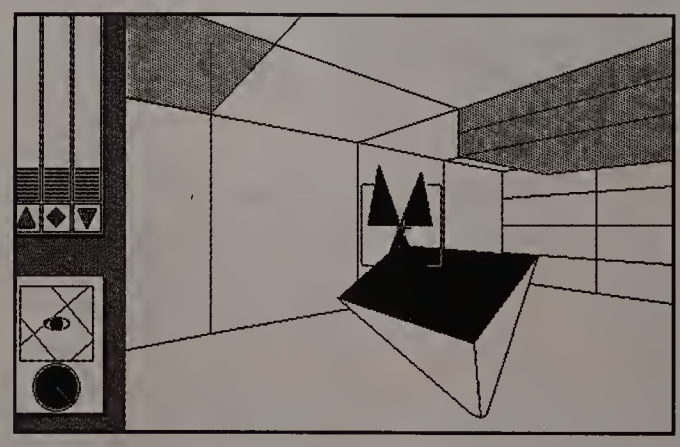
The introduction of the CD-ROM was supposed to catapult gaming into the stratosphere. What we quickly learned was that although many of these disc-

id Software

A company devoted to making PC games, id Software has had a huge influence on every aspect of computer gaming—for the Mac as well. The company's first-person shooters, Wolfenstein 3-D and the Doom series, opened the bloodgates, and scores of game publishers have since joined in the grisly good times.

Bungie

id may have launched the craze for first-person shooters, but many will argue that Bungie made these games better. Though primitive by today's standards, Bungie's first shooter, Pathways into Darkness, offered lighting effects not found in other games of the time. And the Marathons combined spectacular action with engaging story lines—something id has never attempted. In these early titles, Bungie danced the "we've seen it and can do it better" two-step, taking a genre that had been tried—and found wanting—and polishing it to a fine gloss. With the Myths, Oni, and the upcoming Halo, Bungie is setting the pace—establishing awesomely high standards for other game publishers to follow.



The Colony In its day, this adventure seemed terrifyingly real.

The Internet

For much of its short history, computer gaming has been a solitary affair. The explosion of the Internet has changed all that. In the past few years, thousands of computer gamers have banded together across the Web, mostly to blow the bejesus out of each other. Granted, shedding other gamers' virtual blood and dancing over their prostrate carcasses is fairly antisocial behavior, but with cooperative gaming coming to the fore and the introduction of gentler forms of multiplayer Internet play, there's a very real possibility that computer gaming will finally bring people together rather than drive them apart.

And, honestly, is that such a bad way to start the next thousand years? **m**



Dark Castle Its graphics crushed anything the PC could offer.

Contributing Editor CHRISTOPHER BREEN cares not one whit whether the next millennium begins on the first day of 2000 or on the first day of 2001, so save your breath.

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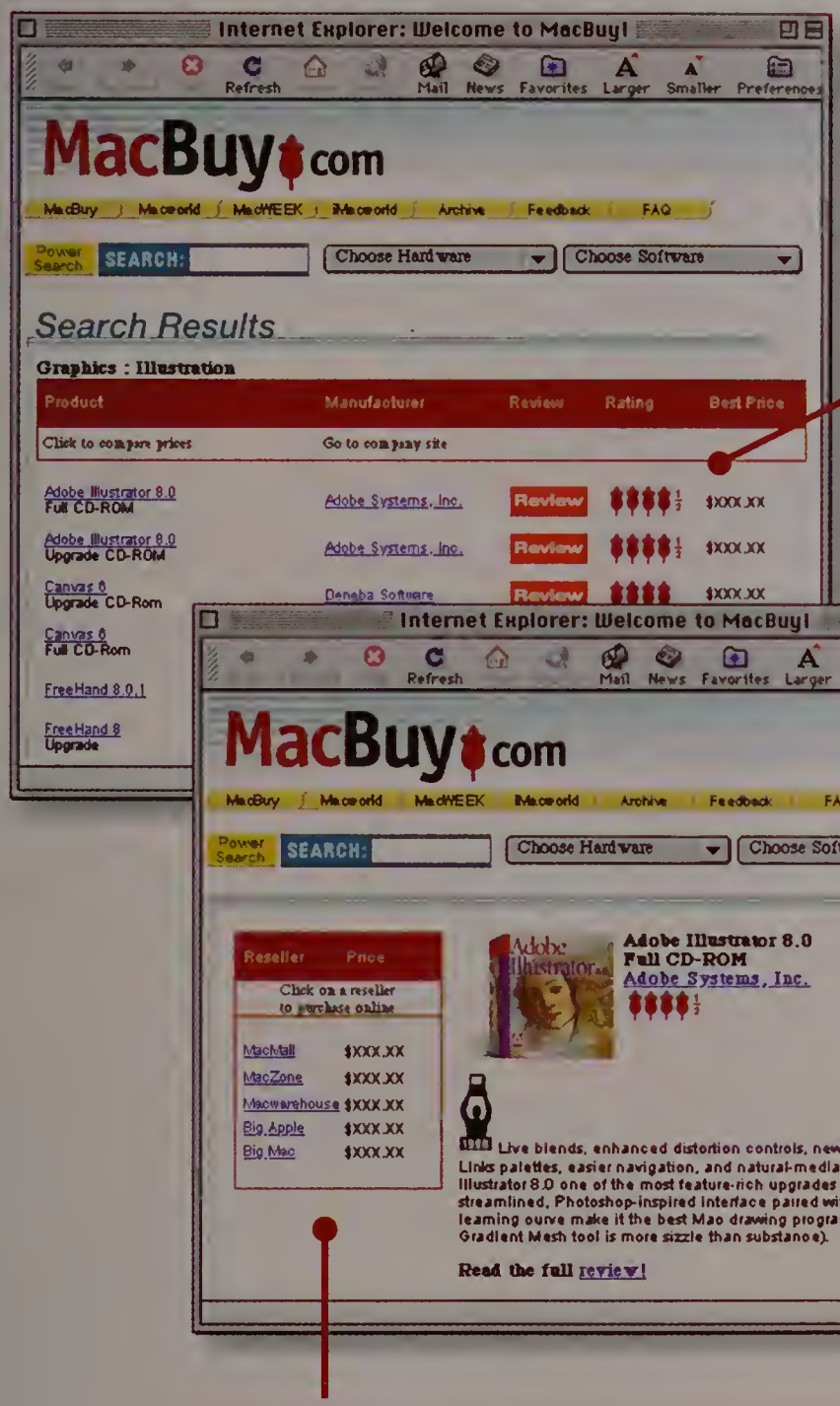
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The iMac

THREE NEW iMACS DELIVER MORE POWER AND THE MAGIC OF DIGITAL VIDEO

Last year, Apple redefined the look-and-feel of the personal computer, transforming the utilitarian beige box into a curvy, colorful, translucent object that pushed the boundaries of what a computer could be. But with the release of the next generation of iMacs, Apple is trying to top its original success. ♦ Since the first iMacs appeared on the scene, we've been wondering what the next step in iMac evolution might bring. The candy colors were a natural, but the computers inside those eye-catching cases didn't change much when Apple shifted from Bondi blue to strawberry. Nor was the gradual elevation of the iMac's G3 processor from 233MHz to 333MHz anything to write home about. ♦ Now we've seen the future of the iMac, and it comes in three parts: the $999 iMac, the $1,299 iMac DV, and the $1,499 iMac DV Special Edition. Just as the original iMac heralded the growing importance of the Web, making it easier to use the Internet, the new DV models boldly announce what Apple feels is the next frontier in home computers: digital video.

BY FRITH BREITZER

Photography by Mark Johann

Is Back



Lights! Camera! iMac!

THE MAC OWES MUCH OF ITS ORIGINAL POPULARITY TO DESKTOP PUBLISHING, the killer app that transformed the way we communicate in print. Now Apple is hoping to launch a similar revolution in desktop video with an easy-to-use video-editing program called iMovie.

iMovie, bundled with every iMac DV and iMac DV Special Edition, lets you assemble video clips into movies that you can post on a Web site, copy to VHS tapes, or even e-mail to friends. Using a simple drag-and-drop interface, the program lets you add titles, scrolling credits, sound effects, voice-overs, and transitions.

Apple sees iMovie as the ideal complement to digital camcorders, which can transfer digital video to the iMac DV via FireWire. You can even copy your finished movies back to the camera and, from there, a VCR.

Behind the Scenes

iMovie sports an interface similar to that found in QuickTime Player 4.0—a "shelf" that holds as many as 12 video scenes. To add clips, you use a FireWire cable to connect your iMac with a compatible digital camcorder, launch iMovie, click on iMovie's Import button, and then click on the Play button. iMovie places the first scene in an unoccupied slot on iMovie's shelf. iMovie detects scene changes—where you stopped or started filming—and creates a new scene at each break.

To create transitions such as fades and dissolves, you click on the Transitions button, select the type of transition you want to employ, determine the length of the transition, and place it between scenes in the timeline. Titles work much the same way. Type in the text of your title, choose a title style—Centered, Flying Letters, or Music Video, for example—and drag your title to the appropriate location on the timeline.

Cropping scenes is also easy. Just click below the Scrubber Bar, position the beginning and end crop markers, and choose Crop from the Edit menu to dispose of any unwanted footage.

You can export your work back to your camera through the FireWire cable or to QuickTime. When exporting to QuickTime you have access to all of QuickTime Pro's encoders, including the Sorenson Video and QDesign Music codecs.

iCan't Believe It's So Simple

iMovie is a study in simplicity. Granted, that simplicity may limit those with more adventurous ideas, but for those who merely want to piece together a video of their child's first birthday party or a family trip to Disneyland, there's no product on the market that allows you to take on these homespun projects with such ease.
—STEPHEN BEALE AND CHRISTOPHER BREEN



iDirect iMovie's interface resembles that of QuickTime 4.0.

iMac Undressed

The new iMacs, while similar in appearance to the older ones, are slightly shorter—Apple has taken an inch off the top of the previous models. These iMacs are also more transparent—now you can see the monitor tube inside. The steel casing that hid many of the components in the original iMac is gone; you can look right through these new systems.

Those who complained about the chintzy feel of the original iMac's CD-ROM drive will be happy to see that the CD and DVD drives on the new iMacs are slot-loading—you just push in a disc, and it's pulled the rest of the way into the drive, just like sticking a tape into your VCR.

Color Choices Now let's get to the really important stuff—the colors. The basic iMac is available only in blueberry. The iMac DV is offered in the original five colors, although this time the colors are lighter and the plastics clearer. The strawberry, for example, is more of a Barbie-esque pink.

But what might really turn some heads, and stop more-testosterone-driven users from complaining about "girly" computers, is the iMac DV Special Edition. It comes in a handsome gray (derived from the Power Mac G4's graphite color scheme). The chassis is barely tinted, almost completely transparent. You can see right down to the copper wiring.

Smart iMacs, Many Choices

As you'd expect, all three new iMac models offer faster processors and more memory than their predecessors (see the table, "The New iMacs"). But this time, in a change from Apple's previous one-size-fits-all philosophy, buyers can choose more than just the color they want. Now users can choose whether they want the extra features that are part of the iMac DV. And even after they've taken their new iMacs home with them, they'll find the systems much more open to change—you can add memory without cracking the case open like some technical pro.

Back to Basics For the mind-bending $999 price of the basic blueberry iMac, you get a 350MHz G3 processor but no DVD-ROM drive, FireWire ports, video-editing software, or color choices. Still, it should prove an economical choice for users who care more about price than about digital-video features. Users now get 64MB of RAM, instead of the scanty 32MB in previous iMacs; much

more impressive graphics acceleration for gaming; a 6GB drive; and two USB ports on separate buses, rather than the bandwidth-sharing arrangement used by previous iMacs.

Video Star The iMac's most important features come only with the higher-end models, the iMac DV and iMac DV Special Edition. The *DV* in their names doesn't just hint at the DVD-ROM drive in these models; it refers to what Steve Jobs calls the next big thing in personal computing: digital video.

The iMac DV makes video editing a reality right out of the box. Its two 400-Mbps FireWire ports are the same as those on the Power Mac G4, and its 400MHz G3 processor, 100MHz system bus, and 10GB hard drive ensure that there will be enough speed and space to keep everything moving.

Apple's hope is that the iMac DV will change the way people think about home movies. Both of the high-end models come with the company's new iMovie software (see the sidebar "Lights! Camera! iMac!"). You can easily import digital video into iMovie from a digital camcorder (via either of the iMac DV's two FireWire ports) and then create video montages; rearrange clips; and add titles, scrolling credits, special effects, soundtracks, and sound effects. You can then save the videos on the hard drive and send them out to your friends and relatives over the Internet, or you can copy them to a VHS tape via your camcorder.



Food for Thought The iMac's new rear door lets you install RAM quickly and without cracking open the case.

iMac Outreach

One of the major complaints about the original iMac was its lack of connectivity to external devices. It offered two USB ports, but that was about it. There was no high-speed means of connecting peripherals such as fast hard drives, no video-out port for attaching an external monitor or projector, and no easy way to add RAM. All of those problems have been rectified with this new batch of iMacs.

Video to Go On the back of the iMac DV is a small plastic cutout that pops off to reveal a VGA video-out port. (Apple includes a separate cutout designed to fit around the port, so you can choose whether to have the port available at all times or hidden out of view.) Through this port, users can connect the iMac to an external monitor—but the external device will only mirror what's displayed on the built-in iMac screen; it won't display a second workspace side by side with the iMac's.



iMac's Best Friend

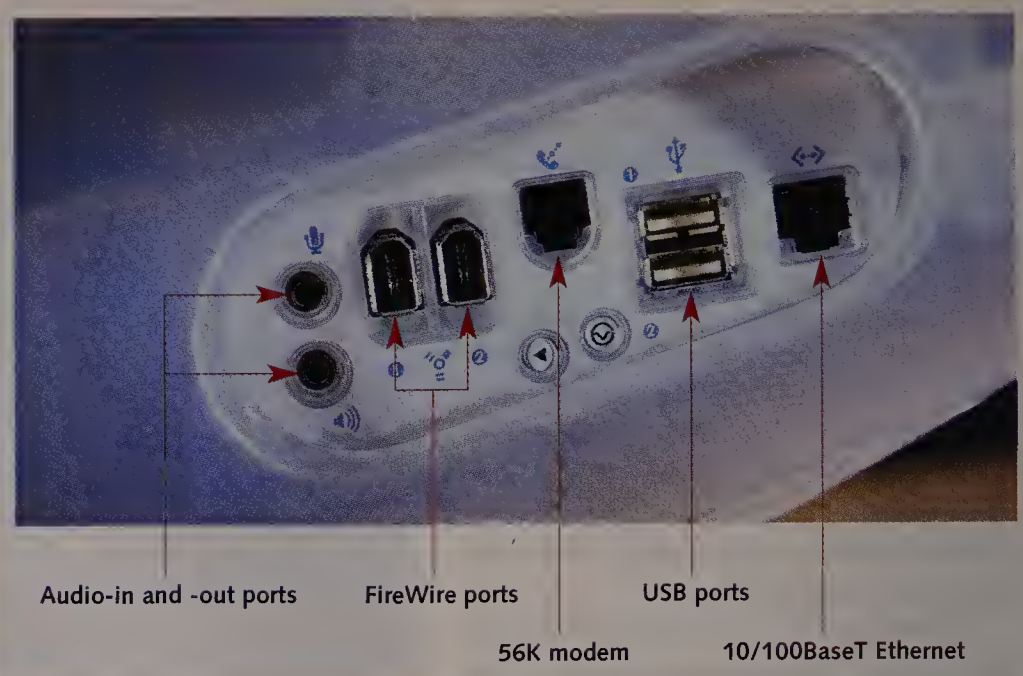
ONE THING THAT MOST COMPUTERS DO POORLY, REGARDLESS of processor speed or amount of RAM, is create pleasing sound. That's why Apple teamed up with renowned audio-component manufacturer Harman Kardon to create a bit of eye and ear candy to accompany the new iMacs.

The iSub is a $99 USB subwoofer—a speaker that produces powerful bass sounds—that looks more like a jellyfish than a speaker; this 6-inch device belts out 20 watts of bass down to about 40Hz. And since the iSub is powered by USB, there's no need to plug it into the wall. (However, Power Mac G4 users shouldn't get too excited about the iSub: it's designed to work only with a new iMac.)

Harman Kardon built the subwoofer to complement the new iMac's built-in speakers, which it designed. The built-in speakers have an eight-octave range and are smart enough to know when the iSub is plugged in, divvying up the aural workload to create the best sound.

Will the iSub make it any easier to understand exactly what Bob Dylan is singing? Probably not. But it'll make listening to whatever it is he's singing a more pleasurable experience.—JONATHAN SEFF







iMac Redux Among the features of the new iMacs is a slot-loaded CD/DVD drive (right).

Easy Upgrades Just below the video-out port on the bottom of the iMac is an easily opened door behind which lie the iMac's memory-expansion slots—you can add as much as 512MB of RAM to these models. However, these new iMacs use a different memory format than their predecessors: industry-standard PC100 SDRAM DIMMs, the same type used in the Power Mac G4.

Link Them Up The easy-open door on the bottom of the iMac also makes it possible to add a $99 AirPort wireless-networking card, which allows as many as ten AirPort-equipped computers to talk to each other or access the Internet through a base station, which can be up to 150 feet away.

This technology, first introduced with the iBook in August (see "Meet the iBook," October 1999), is also optionally available as part of the Power Mac G4. Both the G4 and the new iMacs can function as AirPort base stations. Whether AirPort technology will be a big hit, even outside of classrooms, remains to be seen—people may not feel they need to pay hundreds of dollars to link their computers wirelessly when lower-cost cabling can do the job (see "Link It Up," November 1999).

In any case, the new iMacs also include a V.90 56-Kbps modem and 10/100BaseT Ethernet connectivity, just like the old models. Both ports are accessible through the iMac's side panel, which also houses the USB and FireWire ports.

Sound and Fury

Two other quibbles that jaded Mac fans had with the original iMacs were tinny sound from the built-in speakers and poor gaming performance. Again, Apple has attempted to address those concerns with the new iMacs.

Now Hear This All of the iMac models come with built-in hi-fi stereo speakers from high-end audio-component manufacturer Harman Kardon (see the sidebar "iMac's Best Friend") that definitely sound better than the iMac's original speakers.

Also, Apple has eliminated the iMac's cooling fan. A ring of air vents now surrounds the top handle, and a new convection cooling system keeps everything cool quietly. (It'll also induce thousands of cats to perch atop their owners' iMacs.)

Game Gear There's no denying that the old iMacs weren't exactly tailor-made for gamers. With only 32MB of RAM and an ATI Rage Pro graphics chip, they left serious Mac gamers looking past the iMac at a Power Mac or a Windows-based PC.

Apple may have changed all that with these new systems. The standard

THE NEW iMACS

Model	List Price	Processor	L2 cache	RAM	Hard Drive	Optical Drive	RGB Video Out	FireWire
iMac	$999	350MHz G3	512K	64MB	6GB	24× CD-ROM	no	no
iMac DV	$1,299	400MHz G3	512K	64MB	10GB	DVD-ROM	yes	2 ports
iMac DV Special Edition	$1,499	400MHz G3	512K	128MB	13GB	DVD-ROM	yes	2 ports

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64MB of RAM (128MB on the iMac DV Special Edition) and the addition of ATI's Rage 128 VR 2D/3D graphics accelerator with 8MB of SDRAM graphics memory in an AGP 2× slot might encourage more game companies to develop for the Mac.

Those features, coupled with the under-$1,000 starting price of the iMac, should make it an appealing option for novice or limited-budget users who are interested in playing games and surfing the Net. But if price is not a concern, most serious gamers will probably still prefer the flexibility, speed, and performance of a Power Mac G4 to the iMac.

Missing in Action

While Apple has done an excellent job of addressing many of the original iMac's shortcomings, there are still some nagging problems the company has failed to resolve. The child-size keyboard and hockey-puck mouse remain unchanged. Sure, they look cool, but what good is that when your fingers are cramped, your wrists are aching, and you've tossed that mutant mouse out the window?

And just as we said when we first saw the original iMac, we miss having some form of removable, writable storage media included in the package. While it appears Apple might succeed in killing the floppy, it seems unfair to force users to buy an external Zip or floppy drive if they want to easily transfer files without the benefit of a network.

Apple is heading in the right direction by increasing the memory on the iMac and making it much easier to add more, but the company hasn't gone far enough. Although 64MB might be sufficient for the base model, it doesn't make sense for the iMac DV. After all, Apple suggests not even running the bundled iMovie software on a 64MB machine unless you have virtual memory turned on. Since Apple wants consumer desktop video to become a reality, it

iMAC DV SPECIAL EDITION

Apple Gets It (Mostly) Right

WITH THE RELEASE OF THE LATEST iMAC, NO ONE CAN CONTEND that Apple ignores customer feedback. The new iMacs address the original models' most glaring weaknesses—an underabundance of RAM, poor 3-D–graphics-acceleration hardware, no ports for moving data to and from the machine rapidly, and cheesy-sounding speakers. In each of these areas, Apple made the right move—included 64MB of RAM in the base configuration; swapped out the lackluster ATI Rage Pro chip for an 8MB version of the more powerful ATI Rage 128; added two FireWire ports; and installed higher-fidelity, Harman Kardon speakers. At the top of the line sits the iMac DV Special Edition (SE), a tricked-out iMac with a bigger price tag than the original iMac, but an equally large amount of computing firepower.

It's in the Numbers

For a moderately priced consumer model, the iMac DV Special Edition packs a punch. The machine feels faster than a 333MHz first-generation iMac, and that feeling was reflected in Macworld Lab's tests. The 400MHz iMac DV SE scored 20 percent higher than its predecessor in MacBench 5.0's Processor test—though it scored approximately 15 percent lower than a 400MHz Power Mac G3. That's probably due to the Power Mac's having a full megabyte of L2 cache, compared with the iMac DV's 512K.

Graphics scores were markedly improved in the iMac DV SE as well. Compared with the 333MHz iMac, the iMac DV SE scored 81 percent higher in MacBench's Graphics test. In terms of Quake frames-per-second (fps) rates, this new iMac more than doubled the performance of the 333MHz iMac (from a miserable 17 fps to a very playable 37 fps). Thanks to the new Rage 128 graphics chip, graphics-intensive games such as Quake 3, Falcon 4.0, and Unreal Tournament are now playable—and enjoyable—on an iMac.



Look Inside What's so special about the iMac DV Special Edition? A faster processor, more RAM, and a bigger hard drive than the regular iMac DV. Plus, a see-through case leaves nothing to the imagination.

Not Faultless

While we were very impressed by our iMac DV Special Edition's features and performance, the machine isn't perfect.

would have made more sense to bundle iMovie only on machines that could handle it without dipping into problematic virtual memory.

Too Much Information Finally, a question about the iMac's new, less opaque plastics—especially the transparent plastic on the iMac DV Special Edition: do we *really* need to stare at our computers' guts?

Perhaps this is an attempt to demystify the computer and make it less intimidating. Maybe it's an appeal to geeks who love to see exposed components. Or maybe Apple's design team just thought it looked cool. (We didn't find the new iMac's innards all that interesting to look at.) There's value in leaving something to the imagination, and the new iMacs—especially the Special Edition model—have perhaps gone a bit too far.

The Last Word

Apple has accomplished a colossal feat with the release of the new iMacs: In a period of five months, the company has completely revamped its product line. The PowerBook G3 came out in May, the iBook was announced in July, the Power Mac G4 debuted in August, and now the new iMacs have arrived.

Despite some shortcomings, these iMacs address many limitations of the original iMac and provide quite a few happy surprises as well. With the iMac, Apple struck gold—and regardless of the company's bet on desktop video becoming as popular as desktop publishing, it seems likely that the new iMacs will continue Apple's winning ways. After all, how could the development of a faster, smaller, quieter, more powerful, and less expensive computer be anything but a success? m

Assistant Editor FRITH BREITZER covers display and imaging hardware and Web design and development for *Macworld*.

Macworld LAB TEST

iMac DV Special Edition

The iMac DV Special Edition is clearly faster than the previously top-of-the-line 333MHz iMac, but it's not as fast as a blue-and-white 400MHz Power Mac G3.

Best results in red. *Reference systems in italics.* **MacBench 5.0 scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 in each test.**

	MACBENCH 5.0			QUAKE II
	Processor	Disk	Graphics	Frames per Second
Apple iMac DV 400MHz Special Edition	1,139	1,521	2,588	37
Apple iMac 333MHz	*948*	*1,306*	*1,426*	*17*
Apple Power Macintosh G3 400MHz	*1,314*	*1,398*	*2,859*	*46*

Longer bars are better

Behind Our Tests MacBench 5.0 testing was performed on systems with Mac OS 8.6, 128MB of RAM (64MB for the iMac 333MHz), a 2MB system disk cache, and virtual memory disabled. Quake II testing was done at a resolution of 640 by 480 pixels with 128MB of RAM in all systems.—**Macworld Lab testing supervised by Gil Loyola**

Among our niggling complaints is the fact that the speakers, while far better than those in previous models, still sound somewhat tinny and should probably be used with the iSub subwoofer if you really care about fidelity (see the sidebar "iMac's Best Friend"). Also, it would be nice if the built-in VGA port supported more resolutions than those native to the iMac DV. We also couldn't get Apple's Final Cut Pro to run on the iMac DV Special Edition, which was quite puzzling. After all, if this model is really intended for digital video, users should be able to choose any video-editing application they like—including those applications intended for professionals.

More troubling was the difficulty our iMac had recognizing certain USB devices. A Saitek Cyborg 3D USB joystick, for example, was not recognized on our iMac although it worked perfectly on a 450MHz Power Macintosh G3. Nor would the iMac boot when both a USB Zip drive and an Epson Stylus Photo 1200 printer were connected to it.

It's great that the iMac DV offers a DVD-ROM drive, but Apple's software-based decoding scheme for DVD movies is flawed. Within a minute of starting a DVD movie, the audio loses sync with the video. Also, whenever you activate a menu or change a controller setting within the Apple DVD Player, the video stutters and briefly becomes pixelated. Apple claims to be working on a fix for these problems.

Finally, we're disappointed that this Mac still has the same lack of expandability as its predecessors. Though Apple has done well to create an easy-opening door for RAM expansion, we would've preferred if there was also some sort of expansion slot behind that door.

Macworld's Buying Advice

Some of our concerns with the iMac DV Special Edition—such as compatibility with Final Cut Pro and PACE—affect users who would be more likely to buy a Power Mac G4 rather than an iMac. The USB and DVD issues, however, are sure to impact most users and should be high on Apple's fix-it list. Yet despite these problems, we think Apple's done an admirable job of addressing the basic design flaws of the original iMac (save the execrable mouse and keyboard, of course) and has delivered a consumer Macintosh that we're very enthusiastic about. We're sure you will be too.—CHRISTOPHER BREEN

RATING: ♦♦♦♦ **PROS:** iMac now has great graphics, better speakers, a DVD-ROM drive, and FireWire. **CONS:** DVD playback loses sync; no expansion slot; crummy mouse and keyboard. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **LIST PRICE:** $1,499.



QuarkXPress vs. InDesign:

THE GREAT DEBATE

Go Beyond the Hype with Publishing Gurus Deke McClelland and David Blatner

DESKTOP PUBLISHING JUST HASN'T been the same since the early 1990s, when Aldus PageMaker and QuarkXPress stopped duking it out and Quark began its reign supreme. Oh, the exciting feature wars we had back then. Every release brought new possibilities so fundamental that now we take them for granted: kerning, automatic hyphenation, style sheets, automatic drop caps, color separation—heck, even *spelling checks.*

Just in time for the year 2000, the game is afoot again. With the release of Adobe InDesign 1.0, everyone is talking about desktop publishing. And everyone has an opinion about whether QuarkXPress or Adobe InDesign will win. We decided that this debate deserves more than just a review (see *Reviews*, December 1999, for the word on InDesign). So we invited two of *Macworld*'s most trusted experts—QuarkXPress guru David Blatner, author of *The QuarkXPress 4 Book* and coauthor of *Real World Photoshop 5* (both Peachpit Press, 1998), and Contributing Editor Deke McClelland, author of *Adobe InDesign for Dummies* and *Photoshop 5 Bible, Gold Edition* (both IDG Books Worldwide, 1999)—to have their say. Here they weigh in (and often disagree) about how Adobe InDesign 1.0 ($739; 800/833-6687, www.adobe.com) and QuarkXPress 4.0 ($719; 800/676-4575, www.quark.com) compare, and give their opinions about the claims flying around design-firm watercoolers and prepress houses everywhere.

JORDAN CRANE

CLAIM NO. 1
InDesign sets type better.

DAVID:
There's no doubt that InDesign's greatest strength is in its typesetting. Features such as optical kerning (which better calculates optimal character spacing) and Multi-line Composer (which calculates line breaks across *multiple* lines to get better-looking justified type) are very impressive. (For in-depth information about this topic, see "Setting Type in InDesign," *Create*, in this issue). Factor in the ability to insert "hidden" characters —frequently available in fonts but not accessible through the normal Mac keyboard—and support for the new OpenType fonts, and you have an extraordinary opportunity to set great type with less effort. It's not that you can't create most of these effects by hand in XPress; it's just that InDesign makes it easy.

InDesign's text handling isn't all rosy, however. For instance, there's no way to justify text vertically inside a text frame (an easy task in QuarkXPress). What's more, InDesign's hard-core typography algorithms can require a lot of processing power, causing slower performance on older machines.

DEKE:
I can't vouch for the experience of others, but my personal experience with InDesign is that it runs relatively briskly —*particularly* with long documents—on G3 or better machines. Still, I'm the first to admit that InDesign's recommended system requirements—the list includes a G3 processor, OS 8.5 or later, and 128MB of RAM—are excessive. (Quark recommends that XPress users have 10MB of RAM.) I would be a bald-faced liar if I didn't admit that XPress fares better on slower systems.

But the topic is typesetting, not performance. (How quickly David has snared me into a tangential discussion! Clever boy, that one—I shall not underestimate him again.) And there are a couple of points we have missed so far. InDesign automatically inserts the proper ligatures and small caps when a separate small-cap font is available. It splits out all designer styles for a typeface family to a separate pop-up menu, so you can't accidentally choose a font style that doesn't exist. Its drop-cap controls are precise and easy to access. These are subtle, sometimes obscure enhancements, but they can make a big difference in the quality of your text.



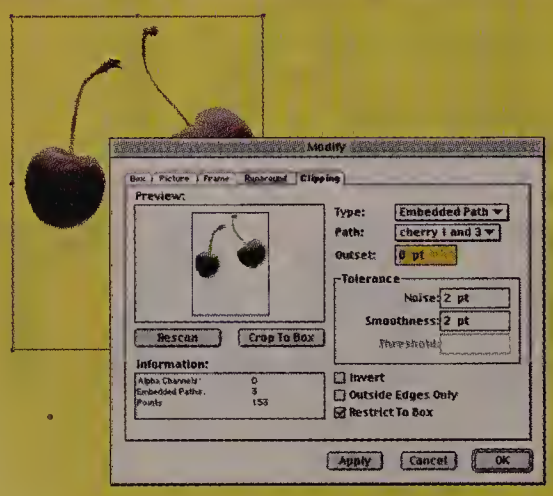
CLAIM NO. 2
It's easy to switch from QuarkXPress to InDesign.

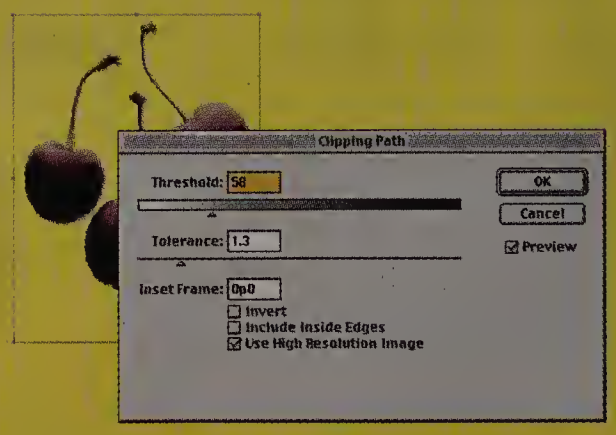
DAVID:
As much as my InDesign-loving friend Deke would like you to believe this one, it unfortunately just ain't true. Even though Adobe claims that InDesign opens QuarkXPress documents, the program rarely does so without requiring significant cleanup afterward. And although InDesign does sport an XPress-like pasteboard, many other aspects will drive XPress users batty—from the creation and application of color to the fact that leading is a character attribute instead of a paragraph-wide setting. Similarly, character styles and text wrap work significantly differently in InDesign, which will trip up unsuspecting QuarkXPress users.

Perhaps more important, however, is companies' investment of so much time and energy into building their infrastructure around XPress: finding reliable consultants, buying QuarkXTensions, training staff, writing AppleScripts, building a workflow. There's nothing inherently difficult in switching to InDesign, but given all these factors, I would certainly not call the process *easy*.

DEKE:
It depends on how you make the transition. If you decide to go whole hog and transfer every document in your archives from QuarkXPress to InDesign, you're in for a lot of pain and manual labor.

CLIPPING CONVENIENCE





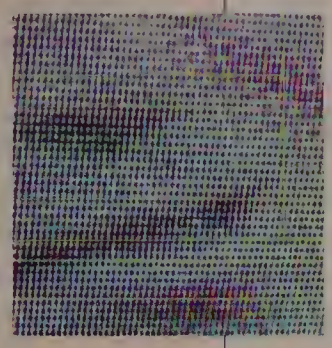
Quark knows how important clipping paths are to graphic designers, and XPress's Clipping dialog box shows it (left). The ability to select from among multiple embedded paths, display the number of points on the Bézier path, and break the image out from the boundaries of the picture box enables designers to really make the most of this technology. InDesign's clipping-path feature (right) is, by contrast, anemic.

But that's an unrealistic and unlikely approach. My advice is to change over incrementally, and primarily with new documents. InDesign does a first-rate job of opening and properly interpreting XPress *templates*. From there, it's just a matter of building new documents in InDesign. Not only is this the more sensible approach, but it's also the approach thousands of professionals took when transitioning from PageMaker to XPress.

Two things to keep in mind: First, when you consider that Quark doesn't share information on its native file formats, it's flat-out amazing how good a job InDesign does interpreting XPress files. Line breaks and text wraps are bound to change, but all text, graphics, and basic formatting attributes will probably remain intact. Second, you can't stick with a program simply out of inertia. Change will be hard, but it's the price you pay to make the leap to a modern desktop-publishing program.

CLAIM NO. 3
QuarkXPress is harder to use.

DEKE:
OK, I have to admit a bias up front. Although I don't particularly like PageMaker, I've long considered it to be easier to use than QuarkXPress. It isn't so much that XPress is unintuitive (although it often is); it's more that the interface is ill suited to "liquid workflow," that dreamy experience in which you sail through an application, hardly thinking about where tools are and how to get things done.



Among my complaints, XPress's odd-size palettes block your view of the page, and you have limited means for selecting tools from the keyboard. (Is it too much to ask for ⌘-I or the ability to simply press the I key to select the Item tool?) There are also few context-sensitive pop-up menus, and—most disgracefully—you're limited to a single undo. Meanwhile, cross-platform designers have to contend with some perplexing keyboard mismaps: on the Mac, ⌘-L checks spelling; on the PC, control-W does. Sometimes the option key corresponds to the PC's Alt key, other times to its control key—you just never know.

If not interface perfection, InDesign is certainly an improvement. You can select tools from the keyboard, navigate by using techniques common to all Adobe applications, and rest assured that the shortcuts you learn on the Mac will transfer key-for-key when you have to do something on a PC. On a sour note, some shortcuts break down in text editing. But the ability to undo up to 300 consecutive operations makes up for that.

DAVID:
I have to admit that Deke makes some good points here. On the other hand, if QuarkXPress is so hard to use, why are two million people using it? There's no doubt that XPress's interface has some unintuitive aspects (such as text-box linking), but I absolutely disagree that InDesign is any easier to learn or use.

Granted, it's nice to use a program that looks and feels like it was written in the nineties (XPress still looks like software made in 1989). Yes, InDesign has multiple undos, dockable palettes, the ability to hang objects off the pasteboard, and really intuitive text chaining.

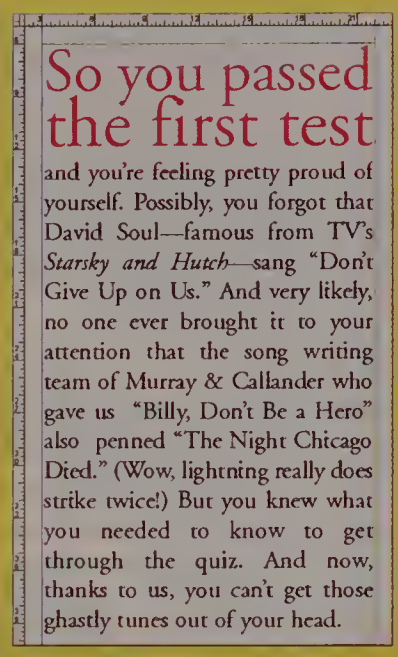
On the other hand, some interface issues baffle me—for example, having to look at three different palettes to figure out how to put a colored border around a box. And when you want to open a palette, you have to search through the menus to find it (the palettes aren't all listed in the same menu, as they are in Photoshop and XPress).

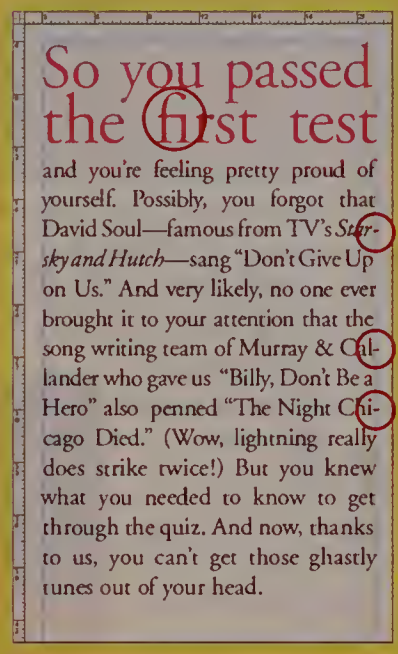
The one that really gets me is scaling text boxes. Start with 12-point text in a box, and then scale the box up to 500 percent. The Character palette still tells you that you have 12-point text in the box, even though it's obviously much larger. This is not easier to use; this is insane!

CLAIM NO. 4
InDesign is not yet appropriate for quick-turnaround publishing.

DAVID:
Although InDesign 1.0 will certainly be useful for a few people, it's pretty clear to me that it will take a few revisions before it's really useful for the majority of users.

SUBTLE AUTOMATION



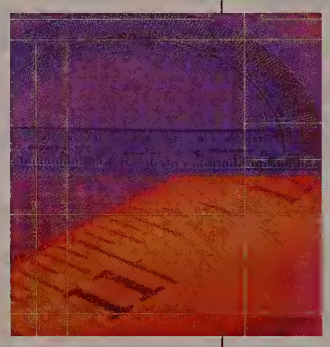


Because QuarkXPress hyphenates just one line of type at a time, the word spacing in the top example becomes progressively looser as you read down the column. InDesign's Multi-line Composer feature, on the other hand, continuously looks several lines ahead, ensuring more-consistent spacing. Add to this InDesign's other type features, including optical kerning, hanging punctuation, and automatic ligature replacement—all evident in the bottom example (results circled)—and you get an evenly balanced block of text.

QuarkXPress has spent years developing crucial production features such as long-document controls (indexing, books), object-level trapping, and text on a path.

Plus, as I noted earlier, the product itself isn't the only thing that counts anymore. How long will it take for service bureaus, printers, and third-party software (such as trapping and imposition software) to fully embrace and support InDesign? Everyone is familiar with QuarkXPress, faults and all, and that means more efficiency.

DEKE:
It's been a mighty long time since I worked in a service bureau—frankly, longer than I care to admit. But I can tell you, back in my day, when a hot new program like InDesign hit the market, we busted our behinds trying to add *some* level of support, and I imagine the same is true today. Furthermore, Adobe is a significant enough player in the electronic-publishing market to make a major play at the service bureaus and commercial print houses. If you walk in the door and ask to print an InDesign file, my guess is the guy behind the counter will respond, "How fast?" Even if he balks, you have alternatives. I laid out a 48-page Photoshop 5.5 insert for my *Photoshop 5 Bible, Gold Edition* in InDesign, knowing full well that my publisher had no way to print it. To make the file foolproof, I merely exported it as a PDF file. The result: 48 pages, two spot colors, no problems.



CLAIM NO. 5
Creating PDF files is much harder in QuarkXPress.

DEKE:
Adobe's Portable Document Format is to multipage documents what EPS is to single-page illustrations—it's a means for trading printable files with anyone on the planet, without the need for the originating application. Sadly, XPress does not directly export to PDF. Instead, you have to shell out some extra cash ($249) for Adobe Acrobat, which can distill an XPress document printed to disk as a PostScript file.

Contrary to early publicity, PDF is not InDesign's native file format. However, InDesign does permit you to export a file to PDF. The downside is that InDesign supports PDF 1.3 only, which requires Acrobat Reader 4 or later (the reader is a free download, so it's not hard to get). Regardless, InDesign's PDF support is way the heck preferable to XPress's no support at all.

DAVID:
Although I think InDesign's ability to export PDFs directly to disk without using Acrobat Distiller is great, I believe that QuarkXPress still has a leg up on the PDF front. Where InDesign's PDFs can be read *only* by Acrobat 4 Reader, a PDF made with XPress and Distiller can be read by the vast majority of Acrobat Reader versions out there (not all of us have time to go get every new version of a program, even if it is a free download). More important, according to Quark, XPress 4.1 (which should be available by the time you read this) will automatically build hyperlinks for tables of contents and indexes. InDesign has *no* hyperlink functionality.

CLAIM NO. 6
Exporting HTML is easier in InDesign.

DAVID:
It's not that InDesign makes HTML easier; it's simply that InDesign has some more-powerful HTML features. Sure, InDesign exports pages as fully rendered HTML files, with columns, cascading style sheets, and linked graphics neatly organized in a folder. By itself, QuarkXPress 4.0 has no HTML export features. Although you can download the free Quark HTML Text Export XTension (www.quark.com/files), which lets you export text only from a single story. QuarkXPress 4.1 should also let you import simple HTML text, which InDesign doesn't currently do. Personally, I wish that each of these companies would leave this sort of thing to third-party plug-ins—such as the $300 Extensis BeyondPress (800/796-9798, www.extensis.com)—and focus energy on getting the rest of its program beefed up.

UNEVEN WEB FEATURES





InDesign lets you take a laid-out page (top) and export it as a fully built HTML document (bottom). The downside? You can't create hyperlinks in InDesign—no small drawback. By contrast, QuarkXPress permits you to export HTML as text only. If you're willing to spend some extra cash, however, QuarkXTensions, such as Extensis BeyondPress, can help.

DEKE:
Although David's brains are soft and watery, I find myself inexplicably compelled to agree with him—if only this once. InDesign does have some nice HTML features. Sadly, however, the program is incapable of doing some very basic things, such as—most critically—creating hyperlinks beyond

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simple Next and Previous links that take you to other pages. So although you might find InDesign helpful if you need to repurpose a flier or another simple document as a Web page, be prepared to spend some time in BBEdit or an equivalent HTML-editing tool. Otherwise, you're probably better off rendering the page as a PDF file so you can post the document with all formatting intact (minus hyperlinks, of course).

Oh, and just joking about David's brains. Despite prolonged exposure to QuarkXPress, his skull remains firm and fully packed.

CLAIM NO. 7
QuarkXPress's color features beat InDesign's hands down.

DAVID:
My brains might be a bit slippery, but I'm still cognizant enough to know that when it comes to color, neither InDesign nor XPress wins.

InDesign has excellent color tools . . . with a lousy user interface. For example, you can choose from a plethora of color libraries (Pantone, Trumatch, Web, and so on), but you can't access them from within the New Color Swatch dialog box—rather, you have to open another dang palette and then choose from the list on a pop-up menu. Adobe also left out the ability to mix spot colors (as you can with QuarkXPress's Multi-Ink feature), which is very useful when building two- or three-color documents. Be that as it may, when it comes to color management, building gradients, and the inclusion of a "Paper" color, InDesign's color features stand up to or exceed those in XPress.

DEKE:
I also don't think either program's color features are anything to write home about—unless you're in the mood to write something nasty. InDesign lacks an eyedropper for copying colors between objects, and you can't drag and drop colors between palettes. Creating spot-color gradients is a pain in the neck: you have to separate palettes from their default locations in order to get much work done, and the Overprint options are squirreled away by themselves in a palette labeled Attributes—as if *attributes* were somehow synonymous with *stuff that doesn't go anywhere else.*

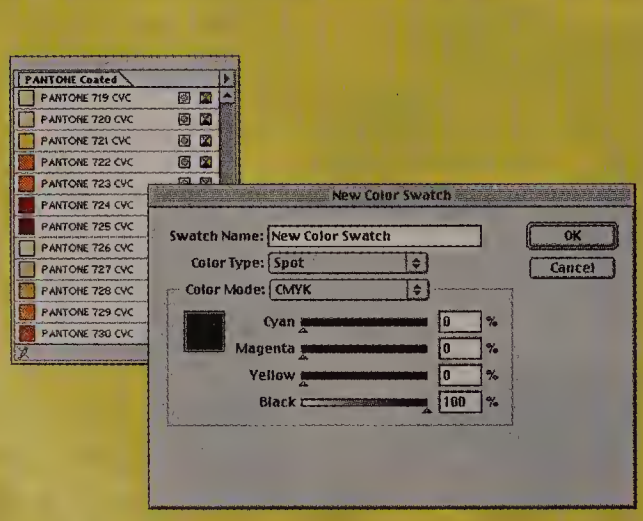
But lest you think XPress is a model citizen, think again. You have to create and name colors in a modal dialog box—there's no provision for mixing a quick color on the fly via a palette. You can drag and drop a color, but if you do, you can't undo. And gradients are limited to two colors. XPress beats InDesign in trapping, but InDesign wins points for its image-by-image control over color management. In other words, where color is concerned, I'd say these two programs are in a dead heat.

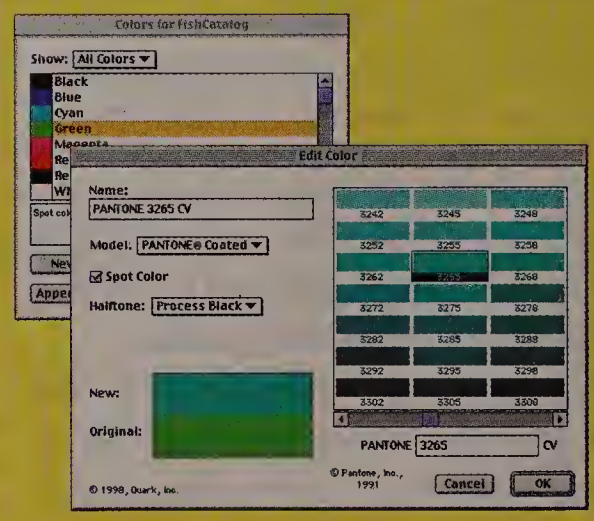


CLAIM NO. 8
InDesign is better than QuarkXPress at importing and editing graphics.

DEKE:
Not surprisingly, the maker of Adobe Photoshop and Illustrator has packed some amazing graphics-handling features into its new program InDesign. You can preview TIFF images and EPS illustrations at unlimited resolutions, essential when you want to precisely align an imported graphic with a line of type or another page element. By comparison, the low-resolution previews in XPress and PageMaker are a cruel and inaccurate joke. InDesign also sports a first-

COLOR CONTRASTS





Overall, QuarkXPress and InDesign both do a mediocre job with color, but in some areas, XPress has the advantage. For example, both InDesign and QuarkXPress let you include Pantone, Trumatch, and other swatch-book colors in your documents, but InDesign makes it difficult. You must open a separate palette for each swatch book (left), you cannot drag and drop colors, and you cannot access these colors from within the New Color Swatch or Edit Color Swatch dialog boxes (you can't even change one PMS color into another one easily). QuarkXPress's Edit Color dialog box (right) is not much to look at, but it's much more versatile.



It doesn't come with a standard floppy drive.

After all, why would you want a standard floppy drive.

So you bought an iMac. And now you are in the market for a disk drive that will allow you the capacity to enjoy our multimedia world. Sounds like a plan.

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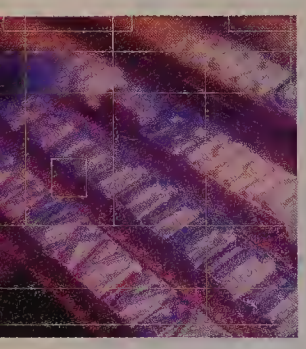
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rate Links palette for managing and embedding placed graphics. You can jump right to an image in your document just by option–double-clicking on it in the palette. Finally, if you place a native Photoshop or Illustrator file, InDesign will interpret all the layers inside the file and even let you edit the graphic in the originating application.

InDesign lets you apply gradients to live type—heck, you can even stroke type with a gradient. And finally, you can edit the clipping paths assigned to an imported graphic. Unlike in XPress 4.0, you never run the risk of clipping an image with a random path that was never intended to be a clipping path in the first place. (Thankfully, this problem should be fixed in XPress 4.1.) On the downside, InDesign's path-editing tools are pretty rough. For example, you can't select more than one point at a time, making it difficult to move straight edges or other segments involving aligned clusters of points.

DAVID:

InDesign is good at handling graphics, but QuarkXPress is better. For instance, XPress lets you choose a clipping path from among multiple embedded paths in a TIFF image. InDesign can read a single embedded path, but you have to convert the path into a picture box upon importing it.



I agree with Deke that the ability to open native Photoshop and Illustrator files is nifty (even though I prefer Macromedia FreeHand), but I don't think this is necessarily a good thing to do in a real-world workflow. Call me old-fashioned, but I still much prefer to rely on TIFFs and EPS files.

THE FEATURES WAR: QUARKXPRESS 4.0

Comparing a brand-new product with one that's ten years old is rarely a pretty sight. But although Adobe acknowledges that its new program isn't going to win a features war right off the bat, InDesign fares better than you might expect. This list covers primarily features that exist in one program but not the other. However, in some cases, neither

	QuarkXPress 4.0	InDesign 1.0
TEXT AND TYPOGRAPHY		
Character styles	●	●
Automatic ligatures	●	●
Hanging punctuation	○	●
Optical kerning	○	●
Multiline hyphenation and justification (H&J)	○	●
Vertical justification of text	●	○
Multiple-language support	○[A]	●
Ability to apply strokes and blends to text	○	●
Text on a path	●	○
Unicode support	○	●
Customizable tracking and kerning tables	●	○
PAGE LAYOUT		
Custom lines	●	●[B]
Display PostScript	○	●
Tables	○	○
Layers palette	○	●
Objects can extend past pasteboard	○	●
Master pages based on other master pages	○	●
Proxy tool in Measurements palette	○	●
Guides can be treated as objects	○	●
Document-page-to-master-page conversion	○	●
Assign specific space between objects	●	○
Duplicate objects as you transform	○	●
Suppress printout of objects	●	○
OUTPUT		
Create PDFs without Adobe Distiller	○	●
Preflight feature	○	●
HTML export	○[C]	●
In-software trapping	●[D]	○
Collects fonts with files for output	○	●
Printer's spreads	○	○[E]

● = yes; ○ = no. [A] Requires $1,595 QuarkPassport. [B] InDesign has few line options and is more labor-intensive; you can specify only dash and space settings for individual lines. [C] Text only, with free HTML Text Export Xtension. [D] XPress's trapping feature isn't great. InDesign requires PostScript 3 printer with the In-RIP trapping option. [E] Will work if you install Adobe

CLAIM NO. 9

InDesign's plug-in architecture is revolutionary and will help it beat XPress in the long run.

DEKE:

Never were truer words plunked down upon a page! Current publishing programs have been notoriously slow to respond to market conditions. Product managers seek guidance from users; receive bucketloads of suggestions; and then sequester themselves in their offices, only to emerge 18 months or a few years later with a program that is, in many respects, obsolete on arrival. Yesterday's needs are met, but today's are not.

By contrast, InDesign's expandable architecture permits speedier reaction to users' needs. This spring, Adobe plans to ship InCopy, a separate program that works closely in conjunction with InDesign and permits editors to tweak and copyfit text while seeing the results of their efforts on a laid-out

VERSUS ADOBE INDESIGN 1.0

product includes the feature yet. Yes, we're fully aware that many of these functions can be performed in QuarkXPress and InDesign if you buy commercial or shareware XTensions, plug-ins, or AppleScripts, but for the sake of this comparison, we're ignoring them.—DAVID BLATNER

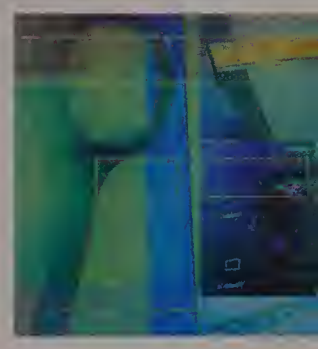
	QuarkXPress 4.0	InDesign 1.0
GRAPHICS		
High-resolution screen previews	○[F]	●
Clipping paths in TIFFs	●	●[G]
Path operations (merge, union, and so on)	●	○
Edit imported vector art	○	●
Tonal correction for TIFFs	●	○
Convert text to outlines	●	●
Import PDFs as graphics	●	●
Select two or more points on a path	●	○
Text wrap around graphics	●	●[H]
PUBLICATIONS		
Create books (multiple documents as one)	●	○
Indexing	●	○
Tables of contents	●	○
Opens other page-layout–program formats	○	●
Different-size pages in document	○	○
INTERFACE		
Editable keystrokes	○	●
Scriptable	●[I]	●
Tabbed palettes ("dockable")	○	●
Support for Mac OS 7 and 8	●	○[J]
Customizable tool preferences	●	○
Multiple undo's	○	●
Scale tool	○	●
Navigation palette	○	●
Multiple views of document	○	●
COLOR		
Ability to mix spot colors	●	○
Gradient swatches	○	●
Tint swatches	○	●
Drag-and-drop color	●	○
"Paper" color	○	●

PostScript driver 8.6 (included on installation CD). [F] Can preview TIFFs and JPEGs with Enhance Preview XT-SE, included with XPress 4.1 install. [G] Minimal support; requires conversion of path to frame shape. [H] Awkward; wraps only around frame shape. [I] Only on the Macintosh. [J] Requires Mac OS 8.5 or later.

page. Meanwhile, rumor has it that Adobe is already working on the next version of InDesign, which should answer the concerns of many current users. I won't say XPress can't keep up—if it can, all the better for us—but Quark has its work cut out for it.

DAVID:
Sorry, Deke, I've got to disagree with you here. Sure, InDesign was written from the ground up to be highly extensible and modular, and yes, this is pretty cool. But when it comes to what this means in the real world, I'm not that excited.

There are over 350 XTensions available for QuarkXPress today, and still only a small percentage of people use them (although they should!). I don't see companies suddenly thinking, "Gosh, now that InDesign is out, we will start buying plug-ins."



Similarly, even though InDesign's modular nature means that Adobe can update the software more easily and frequently, this doesn't necessarily make users' lives any easier—it may mean more upgrades to manage and pay for, more stuff to learn, more chance of problems in workgroups, and so on.

So, which would you buy if you had to choose today?

DAVID:
This is like asking, Which is better, TIFF or EPS? The answer: neither is inherently better; you should choose the one that offers the features you need. I know I'm going to be able to get my work done today with QuarkXPress. I know that InDesign is going to be a rockin' program sometime next year when the next revision comes out. I also know that Quark gets inspired by competition (which it hasn't really had for several years). I think I'd have to go with QuarkXPress.

DEKE:
There's no doubt that InDesign is the best news for XPress users in the last ten years. The worst-case scenario is that it will give Quark the incentive it needs in order to get off its duff and improve the quality of its program. Best-case, it provides you with an alternative. Although even I won't go so far as to pronounce InDesign the definitive publishing application, I urge anyone who's even considered abandoning QuarkXPress to give it a try. InDesign does enough things better than XPress to warrant a test drive. And who knows? If you and InDesign hit it off, you may find yourself entering a long-term relationship with the program—just like me. **m**

DAVID BLATNER is the author of several books, including *The QuarkXPress 4 Book*. DEKE McCLELLAND's newest project is a 20-part video series titled *Total Photoshop*.

Find Great Presents and Good Deals without Ever Leaving Your Armchair

The Macworld

WEB SHOPPER'S COMPANION



THE MACWORLD PART 3 WEB COMPANION

You don't have to fight traffic. There aren't any crowds. And no one's piping in that constant annoying stream of Christmas carols. And the best part? You're in your own home, sipping a little eggnog, at any hour you want.

We're talking, of course, about Internet shopping. E-commerce has come of age, and it's not just about books and records anymore. Want some name-brand or discount clothing? No problem. Shopping for a golfer or a fly fisher? From putters to muddlers, it's all online. Need to buy a food processor? Would you prefer it with or without the juicer attachment? Heck, if you're looking for vintage metal lunch boxes or rare Pez dispensers, there's just no better place to find them.

So there you are, mouse and credit card in hand—ready to click your way into a mall whose size defies imagination. But where do you start, and what should you watch out for?

by Elliot Zaret

You've probably developed your own set of tricks for navigating the crowded December shopping malls, including, perhaps, the location of frequently overlooked parking places. Let us share with you some tricks of our own. We not only found the best places to shop (see the sidebar "The Best Shopping Sites"), but we also figured out the best *ways* to shop.



After all, online buying has its own problems, from security issues to the challenge of picking the right color sweater on your old and faded monitor. But it also has its own rewards—this holiday season, you will be able to find that perfect gift without ever leaving the comfort of your ergonomic chair.

Being a Savvy Shopper

The Web is a lot like the real world, and how you approach it can vary widely, depending on how you like to shop. Do you know what you want and just need to find it cheap? Do you like to browse? Is there a store or a brand you prefer? Is customer service your biggest concern? All these factors influence you, whether you're pushing your basket down the aisles in Target or making a beeline for gap.com. But however you shop, some general principles will help as you navigate the online world.

Check Return Policies Some things are more suited to online shopping than others. CDs are a cinch—you know exactly what you're getting—but it's tough to tell how clothing is going to fit or what colors will look like exactly. For things you'll need to try on (or see on the person you're giving the present), be very aware of the site's return policy. You don't want to get stuck with lame merchandise or a hefty "restocking fee."

Also check for interactive features that can help you make a good decision. For example, for those who are shopping for a new couch or bed, the Furniture .com site's Room Planner feature lets site visitors arrange furniture on a virtual floor plan to see what fits. If you're looking for clothes, you may find the new "Your Personal Model" at the Lands' End site (www .landsend.com) interesting. The site asks you to answer a series of questions about your body. Then it creates a 3-D model, based on your description, on which you can try different outfits. If you're shopping for your guy friends, you're out of luck. This feature is for women only.

Notice Secure Servers Always make sure a site has a secure server before you type in your credit-card information. So how can you check? Look for a little closed lock at the bottom of your browser window, and read the site's security procedures (any site worth its salt will have a section about this). If you want to take an extra precaution, use only one credit card for shopping online, so that you can keep track of your purchases.



Don't spend a lot of energy worrying about your card number being stolen. It's actually safer to shop online than to physically hand the card to a harried holiday-help hiree who might forget to give it back to you. And there's no chance you'll accidentally leave the card on the counter either.

Figure Real Prices Don't assume that something is cheaper online just because it has a low price tag. You still have to add in shipping and handling. That CD that's a bargain at $11.99 isn't such a steal after you've added $3 for shipping. So when you're comparing prices, make sure you're taking the total cost into account.

Check Timing Look carefully at the shipping dates. Some sites, such as Amazon, make it very clear whether your item

PREVIOUS PAGE: PHOTOGRAPHY/DIGITAL COMPOSITING BY MARK JOHANN / ARCHIVAL PHOTO: H. ARMSTRONG ROBERTS

The Best Shopping Sites

Best Music Site

Amazon.com (www.amazon.com)

Amazon has the best customer service of any large-scale (yes, it is large-scale now!) store, real or virtual, hands down. It's even been known to mail a prepaid-return box to customers who changed their mind *after* a CD shipped. Plus, a quick, but by no means comprehensive, check confirmed that Amazon is usually less expensive than its main rivals in the music world (CDNow and Barnes & Noble) and adds valuable extra info about how long each item will take to ship. Amazon offers one gift-wrapping option for CDs and can include a personal message on the packing slip.

Runner-up CDNow (www.cdnow.com) does have one cool feature that Amazon lacks: you can make your own compilation CD of your favorite songs—kind of like those "mix tapes" you made in high school. It's definitely worth checking out.

Best Book Site

Amazon.com (www.amazon.com)

Amazon gets the nod again for many of the same reasons it wins in the music category. It has among the best prices on the Net, a good selection, and above all, fabulous service. Little touches such as "One-click" shopping and user ratings and reviews of books have made Amazon synonymous with online shopping.

Runner-up Barnes & Noble (www.bn .com) is nearly identical. Both sites' selections are quite comprehensive, but they're not equal in all areas. If you can't find what you want at Amazon, check here.

Best Clothing Site

Bluefly (www.bluefly.com)

Bluefly lives up to its promise of being an outlet mall on the Web with bargain prices on items from Calvin Klein, Donna Karan, and Liz Claiborne, to name just a few. Search by price range in any category—it's like making your own bargain rack. It does not offer gift wrapping. A strong runner-up is AOL's Chic Simple (www.aol.com/shopping /chicsimple). This section of America Online's shopping site acts like a splashy interactive catalog with suggestions on outfits and clothing and fashion advice. Click on an item, and you're sent to a name-brand store such as The Gap, Eddie Bauer, Dockers, or J.Crew. Sorry, guys, this site is for women only. Bluefly also sells accessories, such as hats and ties.

will arrive within 24 hours or whether it will be three to five days before they even put it in the mail. Other sites, however, aren't so up-front. Even if you pay for overnight shipping, you may not get your item the next day if it's not in stock. This consideration is especially important around high-volume shopping times such as the holiday season.

Inspect the Wrapping Options If you have far-flung family and friends, online shopping can truly be a balm for the holiday-shopping blues. How? By saving you the time, money, and sweat involved with wrapping, packing, and mailing your gifts. Many sites wrap presents in festive paper and include a card, but not all sites' services are created equal. Often a "personalized card" translates to a message typed on the packing slip (see the sidebar "What They'll Get").

Be Patient As convenient as online shopping can be, it's not without its annoyances. With record numbers of shoppers expected online this year, no one knows how the computers that run the stores (the *servers* behind the scenes) will handle the traffic.

Your shopping spree could end up in the virtual equivalent of a bumper-to-bumper mall parking lot, with slow connections and long waits for pictures to download. If you're going to do your holiday shopping on the Net, be prepared to spend some time doing it. If you can, try to surf in the wee hours, when your competitors might be otherwise occupied.

Browsing with Your Browser

Once upon a time, there was a big divide between "e-tailers" and the traditional bricks-and-mortar retailers. But that was way back in 1998. Today, most brand-name stores have joined the fray. Think "clicks and mortar" or "bricks and clicks."

If you have a favorite store, try typing its name into your browser. The Gap, Eddie Bauer, Victoria's Secret, Bloomingdale's, Nordstrom—just name your favorite place to spend money at the mall, and it's likely to have an online store now. In addition, you'll find traditional catalog merchants, such as REI, L.L. Bean, and Hammacher Schlemmer, online.

What if you're not quite sure what you want to buy for Aunt Mary or you don't have a favorite store? Start by window shopping.



Wander the Mall In order to cash in on the holiday-shopping buzz around electronic commerce, all the Internet's top names have added directories that allow you to browse by category or search across sites for general items you think you might be interested in (for example, "lunch box" or "dog sweater"). In most cases, you can see a preview of items before jumping to the site where they're for sale. This is a good way to find stores you'd never run across otherwise.

There are plenty of places to do your browsing. Yahoo Shopping (http://shopping.yahoo.com/) is classic Yahoo: it's a big directory of shopping categories, all with the Yahoo look-and-feel, and everything can be bought with one cart. America Online takes another approach with its shopping sites—Shop@AOL, Shop@Netscape, and Shop@CompuServe. AOL shopping (www.aol.com/shopping/home.html) looks like one big glossy catalog, complete with suggestions for ensembles—click on a product, and you are taken to one of AOL's merchant partners to buy it.

Excite (www.excite.com/shopping), once the king of search engines, has paired with Intel to create a huge database of vendors and items you can search for. Lycos (www.lycos.com/shopnet) has latched onto some pretty nifty shopping-comparison tools, such as Frictionless Commerce and Active Buyer's Guide, that help you decide what product will best suit your needs in a given area. And MSN (http://

Best Toy Site

eToys (www.etoys.com)

If you're looking for the widest toy selection online, plus a crisp layout that lets you shop by age and category, then eToys is for you. The site offers many gift-wrapping options and personalized cards. Amazon Toys doesn't offer the same variety, but it stands out for its well-written descriptions, customer rankings, and the ability to download sound files of toys that make noise.

Best Kitchenware Site

Crate & Barrel (www.crateandbarrel.com)

This site offers the same dishes, glassware, silverware, stemware, furniture, and knick-knacks as the Crate & Barrel stores. It also keeps the clean, open feel of the stores' white walls and maple display stands. Stemware ordered from the site arrived unbroken, due to the company's meticulous and elaborate packing procedures: the glasses were wrapped in paper and bubble pack and then placed in an oversize box full of Styrofoam peanuts. The site doesn't offer gift wrapping, but you can sign up to receive a "gift reminder" e-mail if you need a little help remembering important events. You can also select and send items online from Crate & Barrel's gift (in other words "wedding") registry.

Best Golf-Goods Site

Chipshot.com (www.chipshot.com)

If you're shopping for a golfer, you shouldn't miss this site. It sells everything from clubs to clothing, plus it has great product information and tips on how to better your game, as well as an entire section devoted to lefties. Chipshot offers gift certificates in addition to gift wrapping for all but the largest purchases (such as golf bags and carts).

Best Wine Site

Wine.com (www.wine.com)

Not only does Wine.com offer a huge selection and detailed background information on wine but it also has a sense of humor. The "Virtual Sommelier" guides you to wines that offer the best "bang for the buck," and you can send questions addressed to "Ask the Cork Dork." Search for wines by type, price, origin, or style (sweet, dry, full-bodied, and so on). You can include a card with your purchase, but the site does not yet offer gift wrapping.



shopping.msn.com) has taken the name-brand approach, connecting you to the merchants you know and love.

When shopping around, don't forget to take a look at Amazon (www.amazon.com), which has branched off from its original mission of selling books and music. Amazon now sells electronics, toys, and videos, too. It also has links to partner sites for lots of things it doesn't sell, such as clothing, sporting goods, pet supplies, and wine. At press time, Amazon announced that it would soon expand its services to let small and large merchants sell goods through its site. Watch for these new "zShops."

Getting to a Great Deal

Once you've found what you want, the Web makes it easy to see if you can get your item somewhere cheaper or faster, or with better customer-service policies. Some clever shopping sites can help you find just about anything you want for the best price possible.

Cruise Comparison Sites Among the best places to see if you can get what you want for less are MySimon (www.mysimon.com), BottomDollar (www.bottomdollar.com), and Compare-it.net (www.compare-it.net), which all let you do comparison shopping.

For one-stop bargain hunting, check out Buy.com (www.buy.com), which sells many items below their actual cost and makes up the difference by selling advertising on its site. For clothing, don't miss Bluefly (www.bluefly.com), which sells name-brand apparel at a hefty discount—and includes free shipping. (Don't miss the search-by-price feature!)

Hit the Auctions And, of course, there are the auction sites. You've undoubtedly heard about these wild-and-woolly sites where individuals sell whatever they want (barring body parts and guns) to the highest bidder.

The reigning auction king is eBay (www.ebay.com), a great place to find unique gifts and used electronics. This site is so popular that it's sometimes hard to find true bargains ($100 computers, for example) anymore, because someone who knows their value has probably already bid on them. But the site's size does make it easier to find the rarest of items, such as an out-of-print Winnie-the-Pooh Pez dispenser sold by a guy in Slovenia.

If you're trolling primarily for bargains, check out other sites that have auctions, such as Amazon (http://auctions.amazon.com) or Yahoo (http://auctions.yahoo.com). For new electronics equipment, OnSale.com (www.onsale.com) is a good place to look. You may also want to check Bidder's Edge (www.biddersedge.com), a free service that allows you to search for items across many different auction sites.

Browser, Beware Play it safe when auction shopping. Stick to well-established sites, read the rules, and pay for fraud insurance if the site offers that option. The built-in insurance policy at eBay will reimburse you up to $200 with a $25 deductible, but only if you meet the "Insurance Guidelines." These include following all the auction rules and require that both the buyer and seller have a good reputation (as judged by the feedback they've gotten from other auction-goers).

Auction goods are typically sold in "as is" condition, and there's little chance of a return policy or a warranty. Ask the seller to insure the shipment so at least you'll be protected while it's in the mail. One final tip: Always pay with a credit card or an escrow service. For a small service charge, escrow services (eBay recommends iescrow, at www.iescrow.com/ebay) handle your payment and give the money to the sellers only after the item has arrived in satisfactory condition. Sound like a hassle? Then take note: According to the National Consumers League, the great majority of online-fraud complaints concern cash and money-order auction sales.

The Last Word

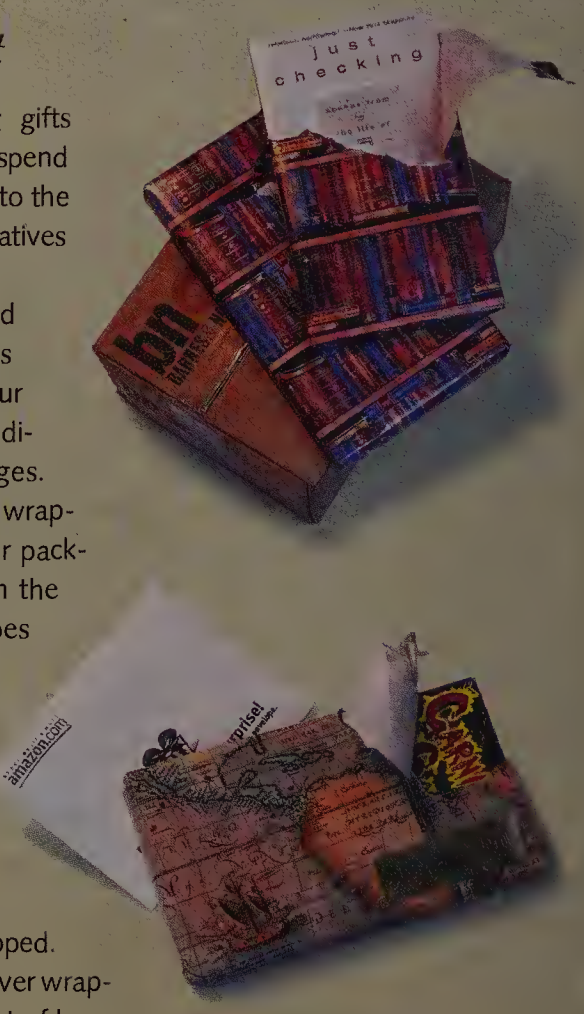
Online shopping probably won't save you from ever setting foot in the mall again. If you hate crowds, however, you'll appreciate the fact that you can take care of a whole hunk of your holiday shopping this way. With a little patience and the tips you've read here, shopping might even be fun this year. **m**

ELLIOT ZARET covers e-commerce for MSNBC.com. Much to the chagrin of his company's mailroom, he does nearly all his shopping online.

What They'll Get

One of the best things about buying gifts online is that you save the time you'd spend wrapping, packing, and taking your gifts to the post office. But will your friends and relatives actually get what you send?

We ordered a video from Amazon and two books from Barnes & Noble. Both sites said the items were in stock. We picked our wrapping paper—both sites charged an additional $2—and wrote our gift messages. We spent about $12.95 in shipping and wrapping charges (for next day delivery). Our package from Amazon came on time, but in the wrong wrapping paper. (Amazon does warn about substitutions.) Our books from Barnes & Noble came in the right paper three days late. The messages we'd included were easy to miss—typed at the bottom of the packing slips. We would have preferred an actual card, but this sufficed. Don't count on your gifts arriving *exactly* as you'd hoped. Your mom will never know you wanted silver wrapping paper. She'll just be glad you thought of her.



KEVIN CANDLAND

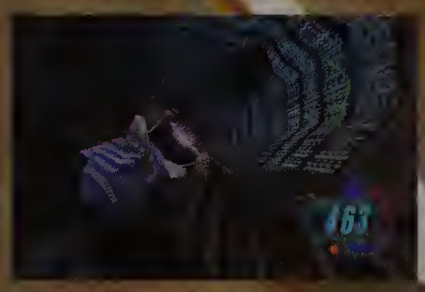
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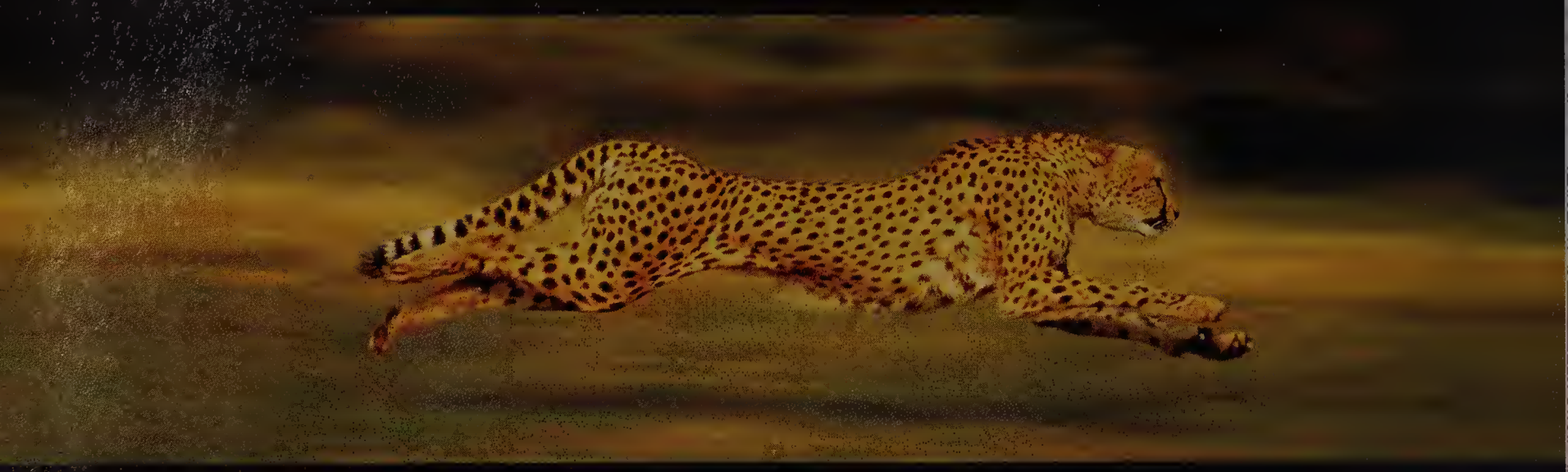




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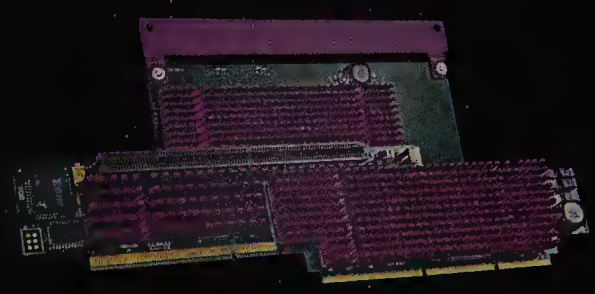


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Secrets

Join the Infrared Revival

YOU MAY ALREADY HAVE FREE WIRELESS TECHNOLOGY

by Joseph Schorr



The infrared (IR) port included on most PowerBooks is—how can we put this politely?—not a feature most users appreciate. Frankly, I never even noticed the tiny IR port nestled on the back of my PowerBook G3 until the day it happened to save my career. A colleague and I discovered, minutes before a seminar at a major trade show, that we needed to swap files between our PowerBooks in order to make a presentation. But neither of us had networking cables, SCSI adapters, or Internet access. We'd left our floppy drives and portable Zip drives at home.

Then we remembered the humble IR port. Moments later we were zapping files back and forth through thin air—and attracting a crowd. Apple's infrared technology not only solved our little dilemma but made passersby stop dead in their tracks. "My PowerBook can do *that?*" several of them asked in disbelief.

Yes, it can. IR ports are built into every PowerBook model released over the last four years, including the latest, bronze-keyboard, 400MHz PowerBook G3 (the port is a tiny, dark-plastic window on the back panel). The first-generation iMacs also have an IR port. So, although it's true that Apple is phasing out infrared ports and introducing far-more-powerful wireless technology with the AirPort, current PowerBook users may already have free, elegant wireless technology right in their hands. Get familiar with it, and in a pinch, you can transfer files to another machine or connect to a network without plugging in a single cord. (Also, if you own a PalmPilot organizer, you can use that old infrared port to HotSync the PalmPilot with your PowerBook, without messing with serial cables or a docking station—see the sidebar "HotSync with No Strings Attached.")

Going Wireless

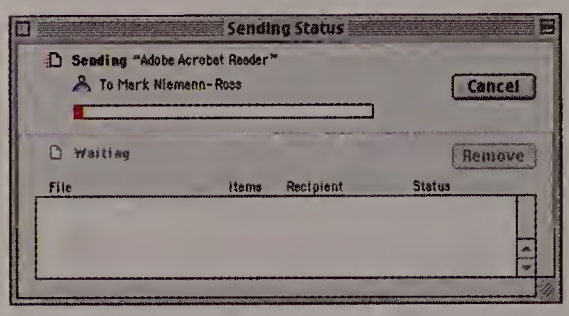
Even if you have an IR-port–equipped Mac, you won't be able to use the port if you don't have the appropriate system components installed and active. The IrDALib and IrLanScannerPPC system extensions should already be installed (they're a standard part of every modern PowerBook software installation).

Before making a wireless connection, you might need to choose an infrared-based protocol—either IRTalk or IrDA—in the Infrared control panel. Older PowerBooks don't have an Infrared control panel because they support only IRTalk, an Apple-only technology, whereas the newer models support IRTalk and IrDA, an industry-standard protocol. (The IR-equipped iMacs support *only* IrDA.) For the quickest hassle-free PowerBook connections, choose IRTalk. Next, open the AppleTalk con-

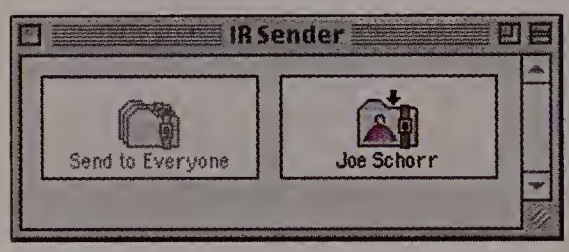
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trol panel and choose Infrared Port in the Connect Via pop-up menu.

Now you're almost ready to start beaming files. Launch Apple IR File Exchange, which comes installed on every Mac that has an infrared port. (You'll find it in the Apple IR File Exchange folder inside the Apple Extras folder on your hard disk.) The IR Sender window will open and display the message "Nobody in Range." Point another PowerBook's IR port at your port, and



Files en Route When files are being beamed from one Mac to another, Apple IR File Exchange lets you monitor their progress in the Sending Status window.



Ready to Send With Apple IR File Exchange, you can skip dealing with the Chooser, passwords, file sharing, and user privileges. As soon as an IR-equipped Mac is in range, a representative drop-folder icon, into which you can transfer files, pops into view. Use the Send To Everyone icon to send files to multiple Macs.

moments later, an icon representing the other machine will appear in the window. To transfer a file, just drop it on the drop-folder icon in the window. Received files automatically show up in the IR Receiver folder inside the Apple IR File Exchange folder.

Infrared connections aren't terribly forgiving when it comes to placement of the IR ports. Unlike the IR communication between, say, your VCR and remote control, a Mac-to-Mac infrared connection requires careful placement of equipment. Place the two PowerBooks opposite each other, no more than 2 or 3 feet apart, with the IR ports directly lined up. Apple says the ports can pick up a signal within a 30-degree radius, but anything other than a straight shot between the ports is dicey. (But here's a secret that, at the very least, will amaze your friends and prove that you're a true wireless-networking pro: you can make your IR connection turn corners simply by diverting the signal with a pocket mirror.)

IR Networking

Apple IR File Exchange is fine for simple file copying, but you can also use an infrared connection for standard AppleTalk point-to-point networking. After setting the Infrared and AppleTalk control panels and putting the PowerBooks into range of each other, just open the Chooser and click on the AppleTalk icon. You should be able to log onto any PowerBook within range and mount shared volumes, just as if you were connected via LocalTalk or Ethernet.

Granted, Apple's infrared technology doesn't give you quite the freedom of an AirPort-equipped iBook. Infrared throughput, for example, maxes out at a modest 4 megabits per second. And forget about roaming through your backyard with an infrared connection. But you never know when that tiny wireless port may be just what you need to get you out of a bind. **m**

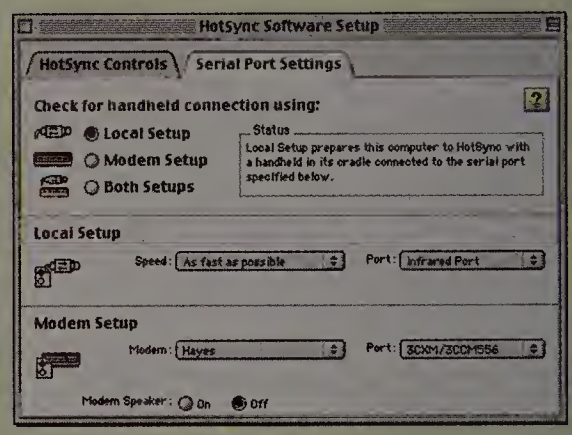
JOSEPH SCHORR is a coauthor of *Macworld Mac Secrets*, fifth edition (IDG Books Worldwide, 1998).

HotSync with No Strings Attached

WHAT'S COOLER than synchronizing the contacts, appointments, and notes in your PalmPilot with programs on your Macintosh? Doing it without wires. If you have an IR-equipped Mac that supports the IrDA protocol and a Palm III or a later model, you can perform a HotSync without using a cradle or a modem. All you have to do is point the PalmPilot at the infrared port.

The secret to pulling this off is to install a handful of special infrared-enabling files that aren't part of the standard Palm MacPac 2 package. If you have the MacPac 2 CD, you'll find the files in the Palm Extras folder. Otherwise, you can download the Palm Extras folder from www.palm.com/custsupp/downloads/macpacdl.html. The files you need are in a folder called IrDA Files inside the Palm Extras folder.

Once the files are in place, launch the HotSync Manager on your Mac and change the Local Sync Port setting in the Serial Port Settings window to Infrared Port. You also have to change the preferences on your PalmPilot, as outlined in the document that accompanies the files. When you're done, you can perform wireless HotSyncs with the IR port.



Wireless Palm With the appropriate Palm Extras software on your Mac, you can configure the HotSync manager for an infrared connection.

The Infrared Macs

NO NEED TO WAIT for an iBook in order to experience some of the freedom of wireless networking. If you have any of the Mac models listed below, you've already got everything you need in order to make infrared connections.

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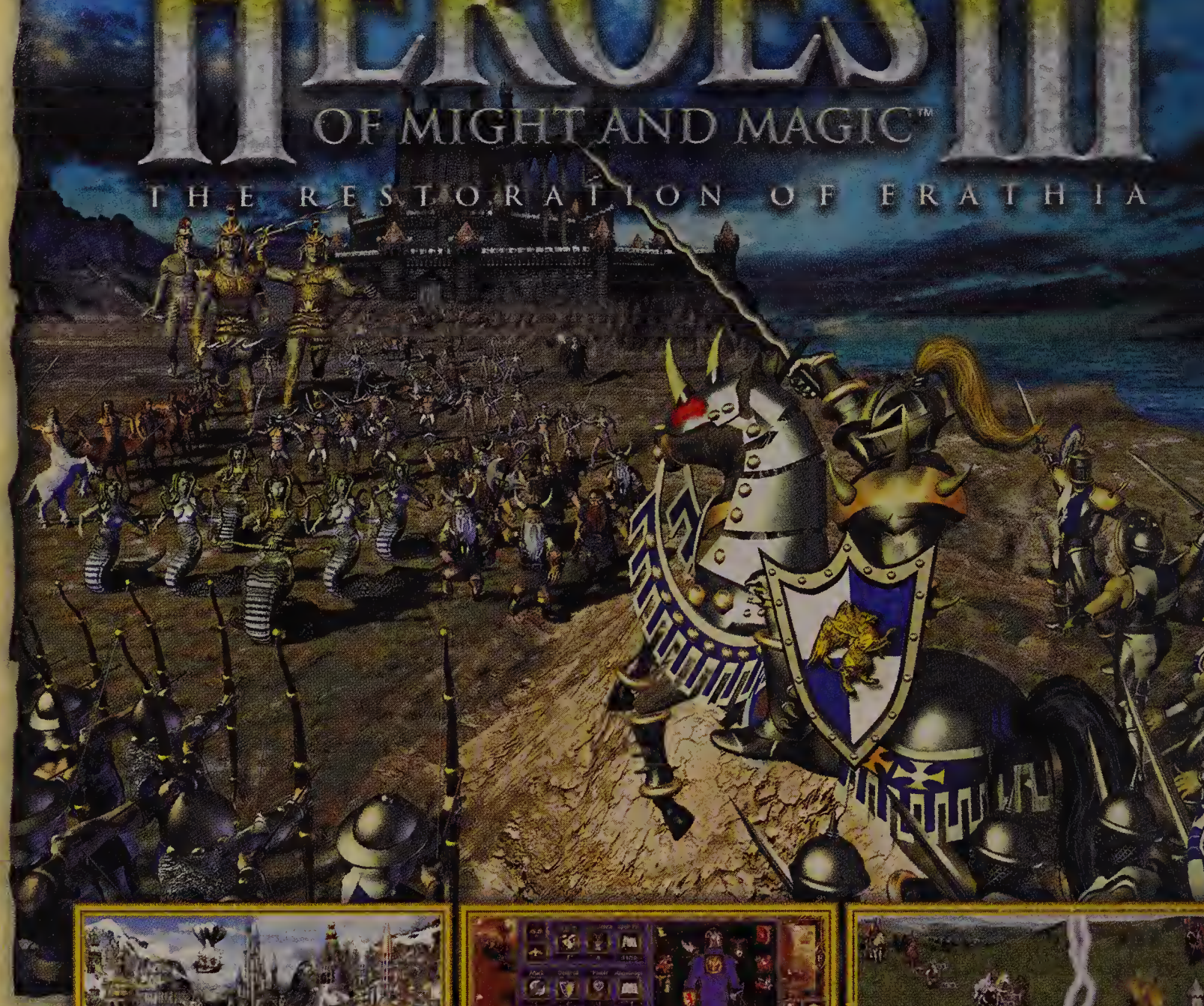
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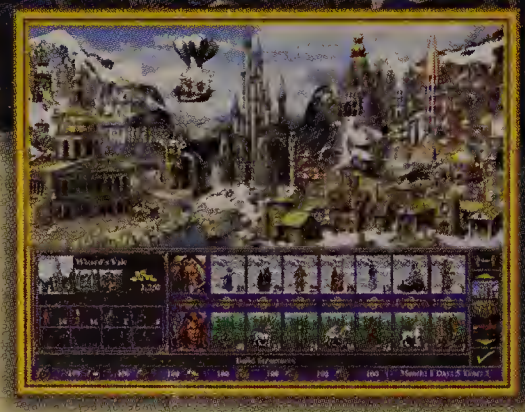
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Tips, Tricks, and Shortcuts

by Lon Poole

Do you like to arrange window contents by their labels but dislike the way Label colors your icons? Parrish Ellison of Placerville, California, discovered that you can make a label transparent by changing its color to white. To do this, choose Preferences from the Finder's Edit menu and click the label's color swatch. This opens the Color Picker window, where you can select a new color. (To make a label transparent in Mac OS 7.6.1 and earlier, use the Labels control panel and change the color to black or gray.)

Shut Down on Time

Q. Before starting an overnight download, I set the Energy Saver control panel of Mac OS 8.6 to shut the computer down automatically, leaving enough time for the download to finish. But when I return the next morning, the computer is always just sitting there, Internet connection dropped, but very much still on.

DAN FERGUSON
Lancaster, Pennsylvania

A. If your Mac connects to the Internet via modem or ISDN modem, you must make sure the Internet connection will be terminated—not merely idle—at least five minutes before the Energy Saver's automatic-shutdown time. In my tests, even an open PPP connection—never mind an open Internet program—was sufficient system activity to prevent shutdown. You must also make sure none of your programs are set to answer incoming calls to your modem, including any fax software and the Apple Remote Access (ARA) server program.

If you're sure these conditions are not causing the problem, try moving the Energy Saver Preferences file from the Preferences folder of the System Folder to the Trash. Then restart and specify a shutdown time that is at least 15 minutes after the current time. For an explanation of the 15-minute interval, see article 34505 in Apple's Tech Info Library (TIL; http://til.info.apple.com/techinfo.nsf/artnum/n34505). For a detailed description of Energy Saver's four-stage automated-shutdown process, see TIL article 22051 (http://til.info.apple.com/techinfo.nsf/artnum/n22051).



If the computer *still* won't shut down automatically, some third-party start-up software may be responsible. Try selecting the Mac OS 8.6 All set in the Extensions Manager control panel, restarting, and testing automatic shutdown again. If the problem disappears, then at least one extension is the culprit and you can isolate it by trial and error, using Extensions Manager or the Conflict Test feature of Conflict Catcher, $79.95 from Casady & Greene (www.casadyg.com).

If all else fails, try removing the Energy Saver control panel and reinstalling it from the Macintosh Operating System installation CD-ROM.

Big Slide Show

Q. I'm trying to put together a slide show. Do you have any advice on which programs to use? I've scanned photos and put them into ClarisWorks (using its Slide Show command), which works OK, but the file is so huge I can't add any more pictures.

MIKE HAWKER
San Diego, California

A. Instead of a program that stores a complete copy of each image in a slide show, choose a program that stores references to separate image files. I like iView Multimedia, $25 shareware from Script Software (www.scriptsoftware.com). With it, you can easily rearrange slides by dragging their thumbnail views and quickly rotate individual slides that were scanned sideways.

High-Speed Security

Q. I recently had a high-speed digital subscriber line (DSL) Internet connection installed. Now that I have a static IP address, do I need a firewall, and if so, where can I get the software?

JIM HALL
Folsom, California

A. By far, the greatest risk to any Mac from the Internet—regardless of its connection time or IP configuration—is from applications and extensions contain-

continues

ing viruses or Trojan horses. A good rule of thumb is to always be suspicious of unknown software you receive as an e-mail attachment, find on untrustworthy Web or FTP sites, or receive as a Java applet or ActiveX item embedded in an unfamiliar Web page.

A computer is also at some risk from attacks by Internet hackers who use probing software to locate vulnerable systems. A full-time connection and a static IP address can heighten your vulnerability to these hackers by making your computer available to them 24 hours a day. However, Macs running OS 9 or earlier with default settings aren't nearly as vulnerable to these attacks as Unix workstations.

It's a different story if your Macintosh provides services over the Internet. If you activate Web Sharing in Mac Operating System 8 or 9, or decide to use TCP/IP for file sharing or program linking in Mac OS 9, be sure to leave guest access disabled and give your registered users tough passwords.

Firewall software offers additional protection against hackers. With DoorStop ($299) or DoorStop Personal Edition ($59), from Open Door Networks (www.opendoor.com), you can block all access from the Internet or set up filters to control access to your computer for specific TCP services and IP addresses. DoorStop can also log all attempts to access your computer from the Internet so you know how often your IP address is being probed.

For those who share an Internet connection on a local network, most software packages include a firewall that blocks unsolicited access to computers on local networks. Vicomsoft (www.vicomsoft.com) has several products of this type, including SurfDoubler ($54), SoftRouter Plus ($149 and up), and Internet Gateway ($215 and up). IPNetRouter, $89 from Sustainable SoftWorks (www.sustworks.com), is another.

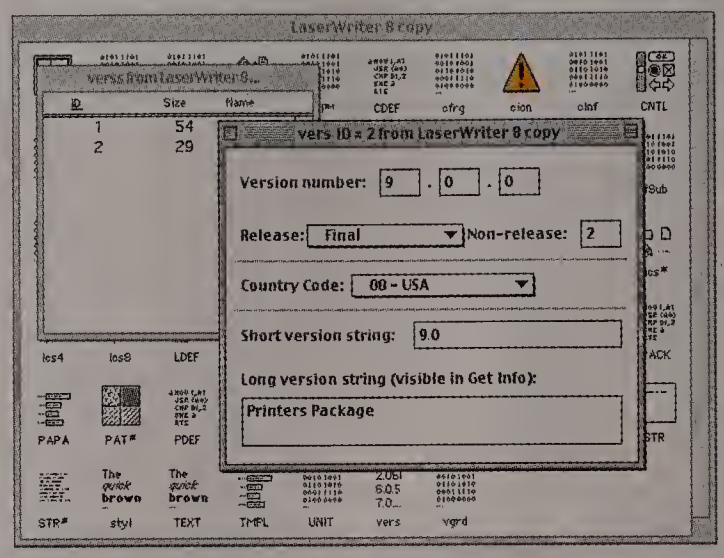
Custom Packages for Extensions Manager

TIP The Extensions Manager control panel in Mac OS 7.6 and later can list and sort items by package, but items may end up in the wrong package or no package at all. I found that Apple's free ResEdit utility (http://asu.info.apple.com) can put stray items into the proper packages and even create new packages. For instance, I created my own Printers package.

To change an extension's package, make a copy of the extension and then use ResEdit to open the original version from your Extensions folder. Double-click the vers icon, and open the resource with ID 2. Enter the package name as shown in "Repackaging Extensions." If there is no vers resource with ID 2, you will have to create one by choosing Create New Resource from the Resource menu or by duplicating vers resource ID 1. This creates a new resource, generally with ID 128, which you can change to 2 by choosing Get Resource Info from the Resource menu. Then enter the package name as shown in "Repackaging Extensions."

Once you have changed the package name, close all ResEdit windows and save the changes. You can delete the duplicate version of the extension once you are sure everything is running smoothly.

RYAN SQUIRES
Richland, Washington



Repackaging Extensions Change the package name of an Extensions Manager item by using ResEdit to open the item's vers resource ID 2 and entering the new name in the space labeled "Long version string (visible in Get Info)." Specify the package name exactly, capitals and all.

Cable-Modem Security Revisited

Although some cable-modem users can access shared files and printers from their neighbors' Macs (as reported in October 1999's *Quick Tips*), Jim Williams of Lombard, Illinois; Nathan Tennies of Charlotte, North Carolina; and Jay Rolls of Menlo Park, California—all of whom work for cable-modem service providers—insist that the majority of cable-modem users don't experience this security breach.

Most cable modems can transmit only network traffic that uses the Internet's IP protocol, filtering out the AppleTalk protocol used by default for file sharing, printer sharing, and program linking. If you see your neighbors' computers or printers in your Chooser, you are using a cable modem that can transmit protocols other than IP and you should ask your cable-modem service provider to configure your cable modem to filter out AppleTalk traffic.

You can also rest assured that other cable-modem users can't snoop through your cable modem's transmissions as if you were all on the same local network. They can't intercept your sent packets, because all cable modems send on one channel and receive on another. They can't receive packets intended for you, because only *your* cable modem is configured to pass packets bearing your IP address. For additional protection, cable-modem traffic is encrypted on its way to and from your service provider.

Of course, none of these safeguards protect cable-modem users from the general risks associated with having an Internet connection or from the risks of using TCP/IP for file sharing or program linking, as discussed in "High-Speed Security," above. m

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LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. He is a coauthor, with John Rizzo, of *The Little Network Book* (Peachpit Press, 1999).

All shareware and freeware mentioned in Quick Tips is available from the Macworld Online software library (www.macdownload.com).

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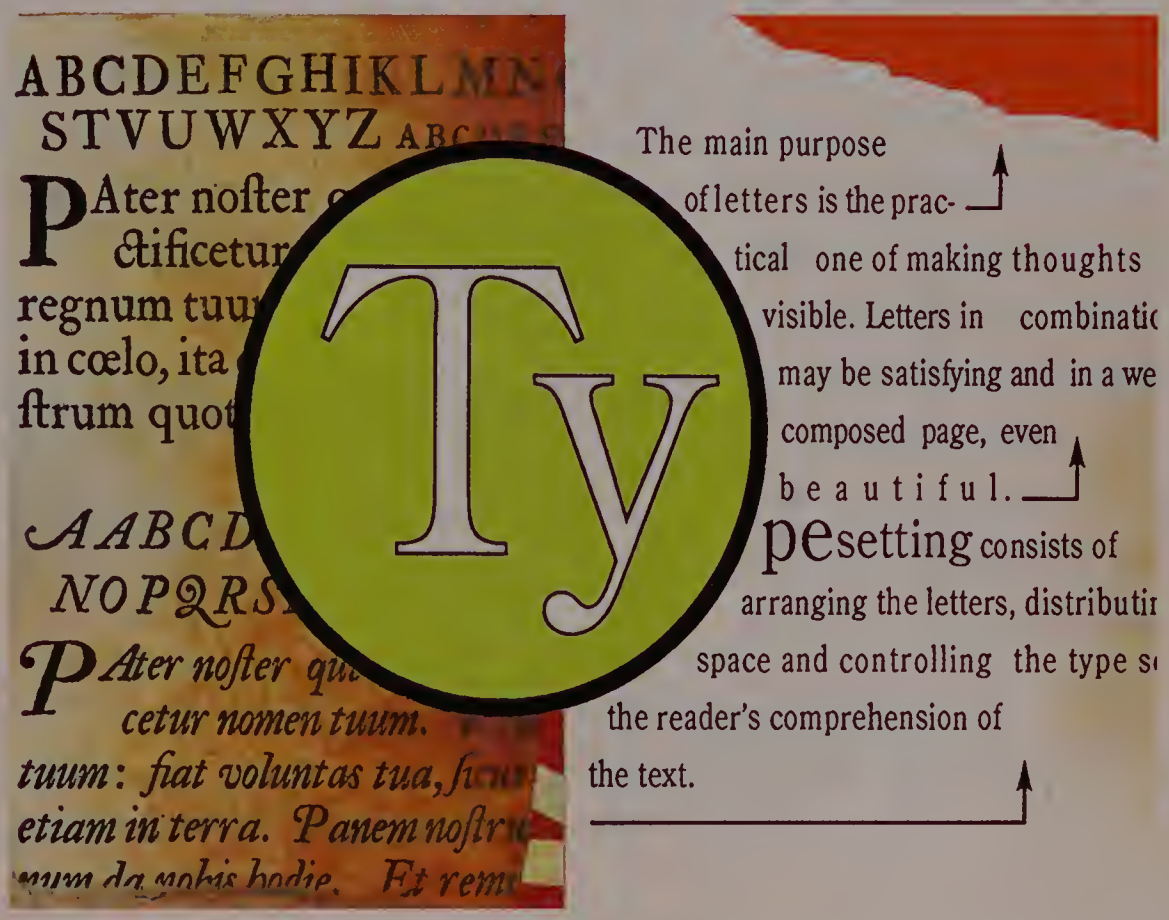
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Setting Type with InDesign

WITH THIS NEW DESIGN PROGRAM, DESKTOP TYPESETTING JUST GOT BETTER

by Olav Martin Kvern



Despite its radical new architecture and the claims of advertising materials, Adobe InDesign is an *evolutionary*—not a *revolutionary*—advance in desktop publishing. But there is one area where its refinements represent a significant breakthrough: typography. I'm an old typesetting hand, and InDesign has features I only dreamed of seeing in a desktop-publishing program until now. InDesign is easily the best desktop-typesetting program available, and its release raises the bar on the competition.

Multi-line Composer

The jewel in this publishing program's crown is Adobe Multi-line Composer. Anyone who's serious about type knows that a large part of typesetting time is spent "walking the lines"—fixing bad line breaks and poor word spacing and letterspacing. These problems occur because every desktop-publishing program other than InDesign uses a *single-line* composer to compose lines of text. As such programs arrange characters on a line, they're considering only the spacing of that line. This means that the next line might have dramatically different spacing—and wide spacing variation between lines can make text hard to read as well as unappealing to look at.

InDesign's Multi-line Composer can examine up to 30 lines past the current line and evaluate up to 30 different ways of composing the text. It creates a list of possible break points in the lines it examines. It then ranks the different break points, considering the effect of each on spacing and hyphenation. Finally, it chooses the best alternative.

You'd think that this would take a lot of time, but when you use InDesign's default settings (6 lines ahead and 6 composition alternatives), you get composition speed equal to that of a single-line composition system *and* better-looking text. You'll still have to spend some time looking at spacing and line breaks, but it will be only a fraction of the time you have to spend with the text produced by the single-line composition system of any other program. For a closer look at Multi-line Composer, see "Tips for Using InDesign's Multi-line Composer."

New Kerning Methods

InDesign offers two automatic kerning methods, metric and optical (you'll find them on the Kerning pop-up menu in the Character palette). When you choose metric, InDesign reads the kerning pairs defined in the screen font and applies them to the selected characters. The problem with this method is that most fonts have very limited sets of automatic kerning pairs—few fonts contain more than 128 defined pairs, barely enough pairs to cover the most-common letter combinations.

InDesign's edge is its optical kerning method—an option that is lacking in QuarkXPress and is slow and awkward in Adobe PageMaker. When you choose optical kerning, InDesign analyzes the *shapes* of the characters themselves and applies kerning to evenly space the characters (see "Optical Kerning"). After that, you can range-kern the text to produce looser or tighter spacing. Optical kerning, like multiline composition, sounds as though it would slow composition to a crawl, but it doesn't. I use optical kerning without noticeable effects on speed. Older Macs may suffer a slowdown.

continues

Tips for Using InDesign's Multi-line Composer

The most powerful feature in Adobe InDesign for improving the look of your text is Multi-line Composer. The proof is in the spacing. These examples use identical spacing settings, but InDesign's Multi-line Composer reduces variation in word spacing and letterspacing between adjacent lines.

"Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a storm filled the air. At last my father appeared, borne on a meteor whose terrible effulgence flashed fire upon the world. 'Stay, wretched creature,' said he, 'and behold the innocent victim that hath fallen a sacrifice to thy barbarous envy!'

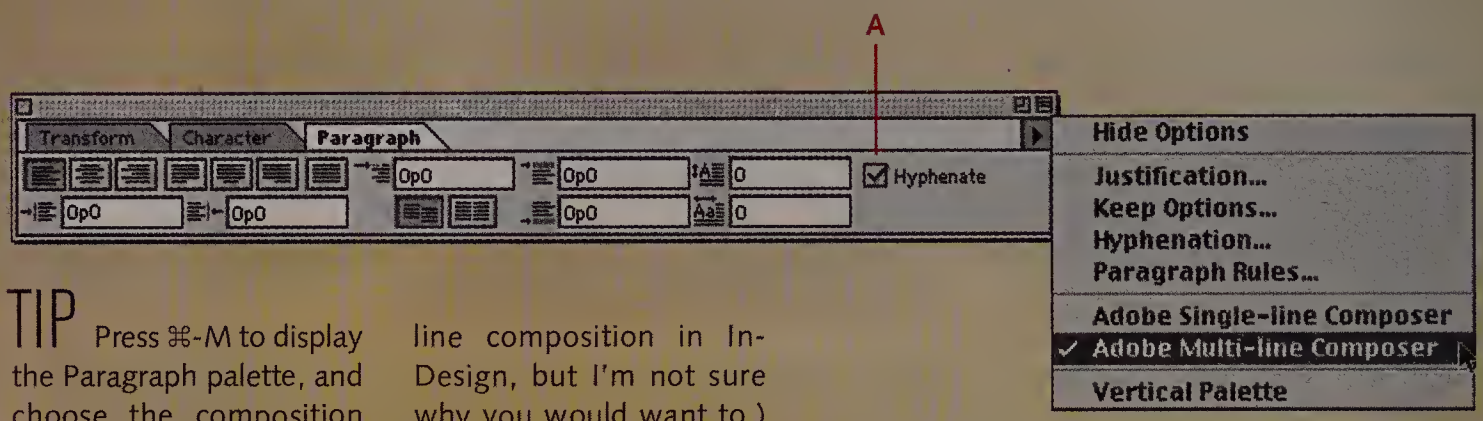
I looked, and, oh, horror! I had smothered the marvellous, the greatly loved bird."

Single-line composition

"Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a storm filled the air. At last my father appeared, borne on a meteor whose terrible effulgence flashed fire upon the world. 'Stay, wretched creature,' said he, 'and behold the innocent victim that hath fallen a sacrifice to thy barbarous envy!'

I looked, and, oh, horror! I had smothered the marvellous, the greatly loved bird."

Multiline composition



TIP Press ⌘-M to display the Paragraph palette, and choose the composition system you want to use. Multi-line Composer is the default composition system. (You can use single-line composition in InDesign, but I'm not sure why you would want to.) To turn hyphenation on or off, click on the Hyphenate check box (A).

Hang It All

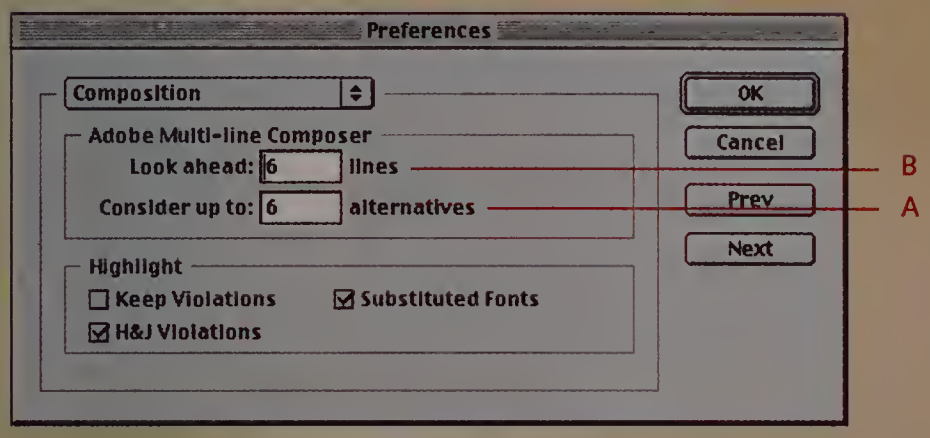
The edges of a text column can sometimes look ragged—even in fully justified text—because of the shape of the characters beginning or ending the lines of text in the column. Some desktop-publishing applications have a feature called "hanging punctuation," which attempts to make the edges of text columns appear more regular by placing a limited set of punctuation marks *outside* the column.

InDesign's Optical Margin Alignment goes further to improve the look of a text column. It adjusts *all* characters at the beginning or end of lines in a text column (see "Optical Margin Alignment"). It looks odd on the screen, but on printed pages, you'll see a subtle improvement over the results that other publishing programs produce.

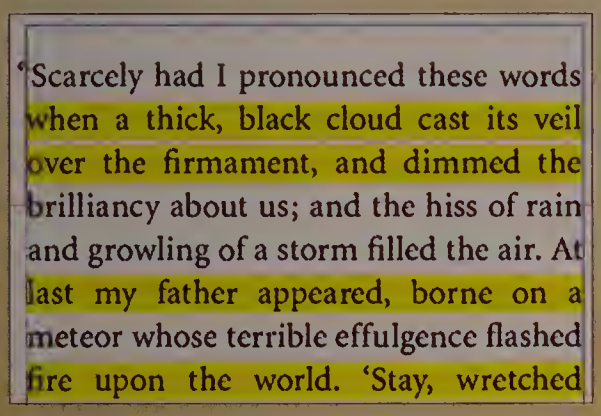
Character Styles with a Difference

Like QuarkXPress, InDesign offers character styles—styles that can be applied to a range of text smaller than an entire paragraph (if you want the formatting to apply to the whole paragraph, use a para-

TIP The options in the Composition panel of the Preferences dialog box control Multi-line Composer settings. You can enter a number from 3 to 30 in either field. Don't change these settings unless composition seems unusually slow. In such a case, try decreasing the value in the Consider Up To *n* Alternatives field (A), although the problem is probably due to some other factor. If you're working with paragraphs longer than seven composed lines, you can increase the value in the Look Ahead *n* Lines field (B). You want Multi-line Composer to be able to evaluate every line in a paragraph.



TIP To have InDesign highlight lines that violate your spacing settings (the values you entered in the Justification dialog box), turn on the H&J Violations option in the Highlight section of the Composition panel of the Preferences dialog box. InDesign uses three shades of yellow to indicate violations—a light shade indicates a minor variation from your spacing settings; darker shades indicate greater variation.

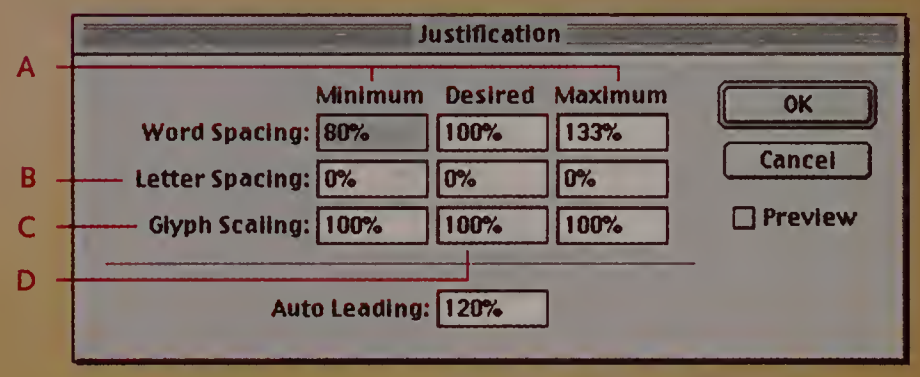

'Scarcely had I pronounced these words when a thick, black cloud cast its veil over the firmament, and dimmed the brilliancy about us; and the hiss of rain and growling of a storm filled the air. At last my father appeared, borne on a meteor whose terrible effulgence flashed fire upon the world. 'Stay, wretched

TIP Whether you want to use multiline or single-line composition, you'll need to provide the spacing settings you want applied to your text, in the Justification dialog box (choose Justification in the Paragraph palette). The values you enter in the Minimum and Maximum fields (A) set the ranges you'll allow InDesign to use when composing justified copy.

If you enter 0% in all three Letter Spacing fields (B), InDesign will never apply letterspacing to the selected text (as XPress will). Instead, it will make spacing adjustments by using word spacing. This approach makes sense, because even a minuscule amount of letterspacing can make your text more difficult to read, but it means you'll have to watch for overly loose or tight word spacing.

Watch out! Entering a value other than 100% in any of the Glyph Scaling fields (C) tells InDesign that it's OK to stretch and squash the characters in a line. This can make for interesting special effects, but you shouldn't use it for everyday text composition—varying character shapes in body text makes the text difficult to read.

The value you enter in the Desired fields (D) sets the spacing for non-justified text.

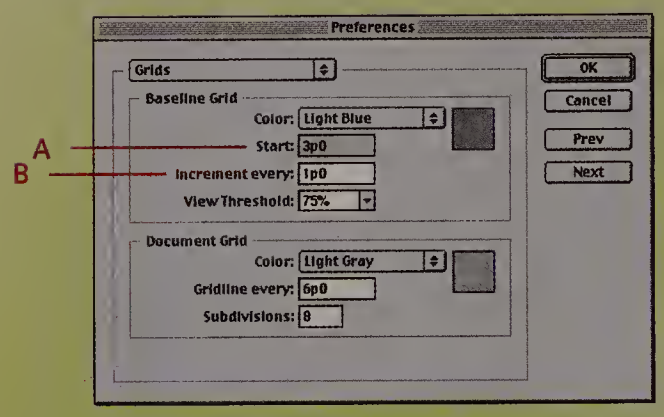


graph style). And, as in QuarkXPress, the easiest way to create a character style is to select a range of text that has the formatting you want and then base your new character style on the selected example. In QuarkXPress, this results in a style that has all the formatting attributes of the selected text. InDesign, however, records as part of the character style only the formatting attributes that *differ* from the default formatting of the surrounding text. This is a feature—it's not a bug—that lets you create character styles that affect only the font and color, say, while leaving all other attributes unchanged.

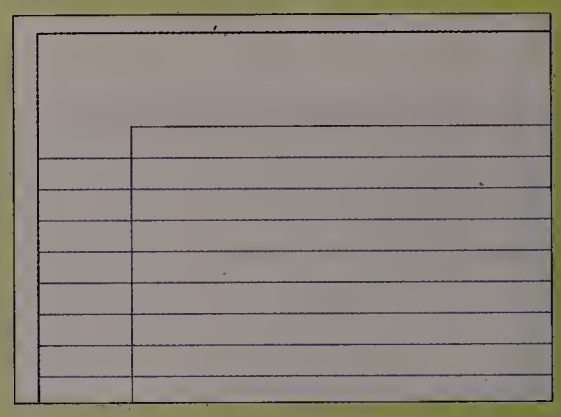
If you want your InDesign character styles to work like character styles in QuarkXPress, you could walk through all the panels of the Edit Character Style dialog box to fill in the missing formatting information. But there's an easier way—the Adobe Technical Information folder on your InDesign installation CD contains a Scripting folder, where you'll find a script named Create Character Style. When you define a character style

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Take Advantage of Grids and Guides

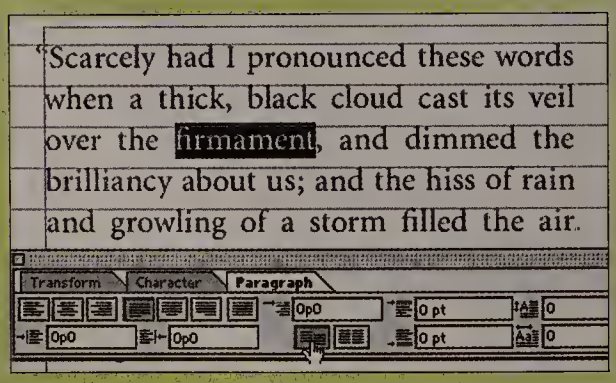


TIP You will find the settings that control the leading grid in the Grid and Guides Preferences dialog box (choose File: Preferences: Grid and Guides to display this dialog box). You can control where InDesign begins marking off the leading grid by using the Start field (A). Set the distance between grid lines in the Increment Every field (B). For a page layout using a leading grid, set this value to the leading of the publication's body text or some even multiple thereof.

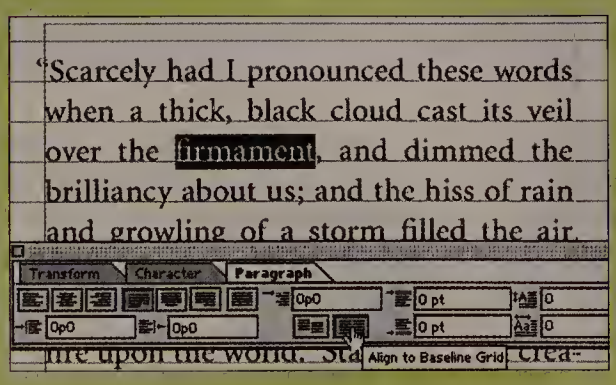


TIP Choose View: Leading Grid to display the publication's leading grid. If the grid does not appear, it's because your current magnification is lower than the leading grid's view threshold. Zoom in or change the view-threshold value. When you turn on the Snap to Guides option (on the View menu), InDesign snaps objects to the leading grid as you draw or drag them.

TIP To "snap" the baselines of text in a paragraph to the underlying leading grid, select the paragraph and turn on the Align to Baseline Grid option in the Paragraph palette. InDesign moves the baselines of the selected paragraph to match the leading grid, which does not have to be visible.

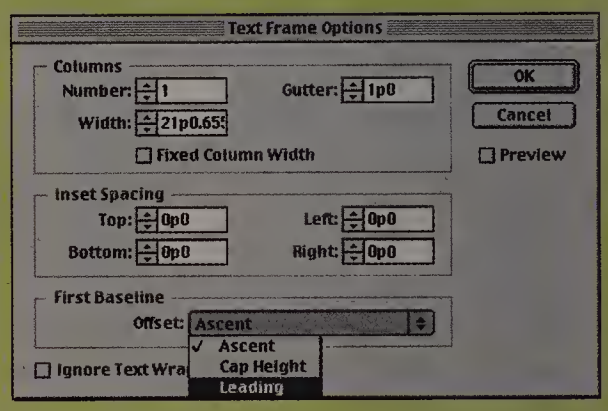


Align to Baseline Grid off



Align to Baseline Grid on

TIP To control the location of the first baseline of text in a text frame, select the text frame and press ⌘-B to display the Text Frame Options dialog box. Then choose Leading from the Offset menu in the First Baseline section. When you do this, the first baseline appears one leading increment from the top of the text frame—regardless of the size of the characters in the line.





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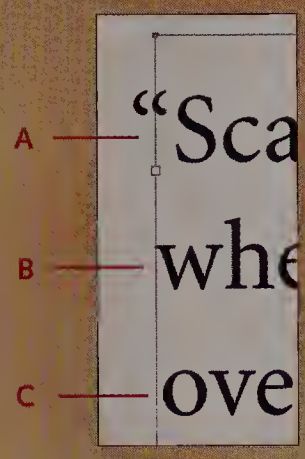
Optical Kerning

The text above shows the metric method of automatic kerning; the more evenly spaced text below was produced with the optical method. The red numbers show the automatic kerning adjustments in thousandths of an em.

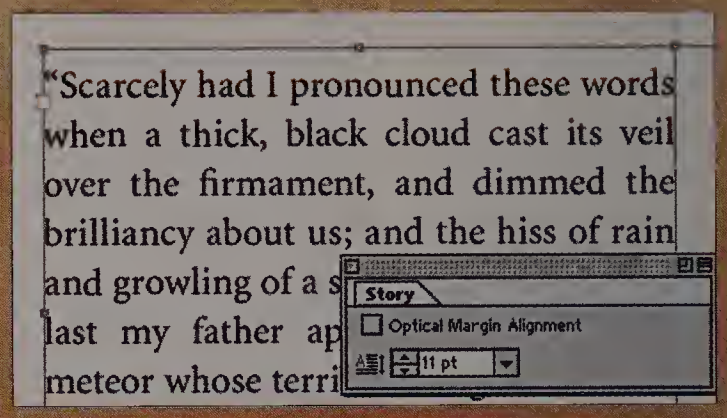


Optical Margin Alignment

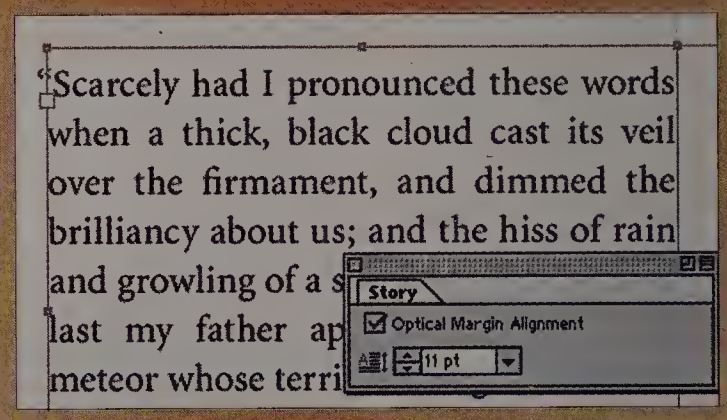
In the text sample at the upper right, Optical Margin Alignment is off; in the sample below it, Optical Margin Alignment is on. In the close-up view, you can see how InDesign adjusts the characters at the edge of the text column. Punctuation (A) is placed outside the column, and some characters (B) hang outside it, whereas others (C) are located farther inside the column.



Optical Margin Alignment close-up



Optical Margin Alignment off



Optical Margin Alignment on

with this script, it will record all the formatting attributes of the selected text, à la QuarkXPress.

InDesign's Leading Grids

A leading grid is a grid based on the leading of your publication's body text. It's a very powerful design tool, because it can give structure to a layout. Leading grids make production decisions easier—no more worrying about how and where to fit images or text—and prevent leading creep (a typographic gaffe in which the baselines of body text in adjacent columns don't line up). Readers can perceive the underlying structure imposed by a leading grid even when the grid is not immediately obvious. Leading-grid–based layouts "feel" more solid and consistent than designs that are not based on a grid. PageMaker and QuarkXPress both include tools for "snapping" the baselines of text to a leading grid, and InDesign follows suit in providing these essential features. For details on working with leading grids, see "Take Advantage of Grids and Guides."

Inching toward Perfection

InDesign has room for improvement. There are lots of typesetting features I'd like to see in it, and parts of the program aren't up to the standard of its type controls. But with its excellent manual control and intelligent automation, Adobe's new entry makes it easier to set good type. m

OLAV MARTIN KVERN is an illustrator, graphic designer, software developer, and writer. He is the author of *Real World FreeHand 8* (Peachpit Press, 1998).



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Low-Fat Graphics for the Web

USE PHOTOSHOP 5.5 TO MAKE YOUR GRAPHICS LITHE AND YOUR WEB PAGES FAST

by Mike Wooldridge



Cramming too many bloated images into a Web page has always been one of the surest ways to scare away visitors. Images that have been saved in the wrong format or compressed poorly can slow download speeds to a crawl. That's why a key step in Web design has always been optimizing a site's buttons, photos, and other graphics before the site goes live.

Strangely, the most popular image-editing application—Adobe Photoshop—was historically less than ideal when it came to optimizing images for the Web. Because it lacked an efficient interface for tweaking and comparing compressed images, designers had to either install special plug-ins or defect to newer imaging applications, such as Macromedia Fireworks and Adobe ImageReady, that were built for Web design.

With Photoshop 5.5, Adobe has addressed many of the Web-related shortcomings of its flagship product. A new Save For Web option lets you easily preview, apply, and save optimization strategies for the main Web image formats: JPEG, GIF, and PNG. And because Adobe now bundles Photoshop with ImageReady 2.0, you no longer need to buy two applications to get high-end imaging power and handy Web development options. (See the sidebar "Optimization on Autopilot" for a tip on using ImageReady.) Armed with some basic knowledge about how image compression works, even Photoshop beginners should be well prepared to create image-rich sites that download quickly.

Compression 101

Image-compression formats take advantage of the fact that describing an image with mathematical formulas can be much more efficient than describing it one pixel at a time. It's analogous to defining an image of a green square as "a 10-by-10 grid of green pixels" as opposed to defining it as "one green pixel, then another green pixel, then another green pixel," and so on. Compression schemes often decrease the amount of space required to store an image by 90 percent or more. (For a file-size comparison of the different imaging formats, see the sidebar "Which Format? Compression Basics.")

Different types of image compression use different formulas to compress information, and each has its advantages and disadvantages. Luckily, you don't have to be a mathematician to choose the best compression format for your Web-page images.

If your image is a photograph, you'll want to save it as a JPEG file—because the JPEG format can support millions of colors in a single image, and because it excels at compressing images with continuous changes in tone. JPEG's main drawback is that it's a *lossy* compression format, which means you lose a little information when you save an image as a JPEG file. The loss of information shows up as small artifacts that can multiply in intensity if you repeatedly compress the image in that format. When you save an image as a JPEG, you select the amount of compression to apply. This involves deciding how many artifacts you're willing to put up with in exchange for a small file size. Photoshop's Save For Web option lets you adjust the JPEG compression and

continues

preview the compressed image side by side with the uncompressed original. (This comparison feature was previously one of the advantages of using Fireworks and ImageReady.)

If you really want to pack down your photos, Save For Web lets you add Gaussian blur to your images before saving them. JPEG works best with continuous tones, so softening a picture's edges with the blur tool can help boost compression.

The other type of image Web designers deal with regularly is illustrations with hard edges and large areas of flat color. These are best saved as GIFs (or as PNGs, which we'll discuss below). GIFs are limited to 256 colors, which is usually enough for flat-color illustrations (but not for many photos).

GIF is *lossless*, meaning it doesn't lose information during the compression process. However, a new lossy adjustment in Photoshop 5.5 allows you to increase compression by discarding information before saving your files as GIFs. (For more on this, see the sidebar "Put Your GIFs on a Diet.")

The most important part of optimizing compression with the GIF format is decreasing the number of colors in the image as much as possible (this is one of Save For Web's options). Flat-color buttons and similar graphics can often be reduced to 32 or fewer colors and still display fine. Other Save For Web functions, which include determining how a GIF's color palette is selected and whether dithering will occur, have different (but minor) effects on file size, depending on the image.

A Peek at PNG

The Save For Web option also lets you save images as PNG (pronounced "ping") files. PNG is the least-used compression format, mainly because it's the newest, and browser support for it has been spotty. (Microsoft Internet Explorer 4.5 for the Mac doesn't support PNG at all; Netscape Navigator 4.5 supports PNG but not all of its features.)

The PNG format's advantage is that it can support millions of colors, like JPEG, but it's also lossless, like GIF. Therefore, it often generates a higher-quality (though slightly larger in terms of file size) compressed image than GIF. Other advantages include its ability to store gamma information, which can compensate for different display brightnesses across operating systems, and partial transparency.

The PNG format should finally have full support in version 5.0 browsers, giving Web designers more reasons to consider PNG when optimizing images. **m**

MIKE WOOLDRIDGE (mike@mediacosm.com) is a writer and Web designer living in Berkeley, California.

Which Format? Compression Basics

THE THREE DIFFERENT IMAGE FORMATS AVAILABLE IN PHOTOshop 5.5's Save For Web tool compress the pixel information using different mathematical formulas, and each formula yields different results depending on the image in question. Here, for example, are the original and compressed sizes for these photographic and flat-color images.



FLAT-COLOR ART
140 by 160 pixels

TIFF, uncompressed: 39.4K
JPEG, medium quality: 5.0K
GIF, 16 colors: 4.3K
PNG, 16 colors: 6.0K



PHOTOGRAPH
360 by 270 pixels

TIFF, uncompressed: 307.6K
JPEG, medium quality: 15.6K
GIF, 16 colors: 25.4K
PNG, 16 colors: 29.3K

The JPEG format is the clear choice for photographic images. While the JPEG format uses several mathematical techniques to save file space, the most important one is Discrete Cosine Transformation (DCT). DCT saves space by approximating the arrangement of an image's pixels and discarding the information that is least relevant to the human eye.

For compressing a flat-color illustration, you're better off using either the GIF or the PNG format. This is because JPEG, though it may be able to shrink such an illustration to a similar file size, adds artifacts to the resulting image (this is because JPEG is a *lossy* compression format, meaning you lose some pixel information during the process). These artifacts will be especially noticeable in the solid-color areas of illustrations, which is why you want to use one of the *lossless* formats—GIF or PNG.

The GIF format compacts image information using a mathematical technique known as LZW compression (named for its inventors, Abraham Lempel, Jacob Ziv, and Terry Welch). LZW works by creating a dictionary of different pixel patterns that occur in an image; it then references the dictionary entries multiple times to re-create the image. This saves space because, while patterns tend to occur more than once in an image, they have to be stored only once in the dictionary. The GIF compression algorithm is patented by Unisys, which collects royalties on applications that use GIF compression.

PNG compresses information using a technique similar to GIF's LZW compression, but it's different enough not to infringe on the Unisys patent. (The fact that PNG is unpatented—as is JPEG—is one of the main reasons developers have pushed for its acceptance.) A PNG file can have millions of colors, but you'll want to use much fewer for flat art, because doing so will decrease the final file size.

Put Your GIFs on a Diet

COMBINING PHOTOSHOP'S SAVE FOR WEB TOOLS WITH A FEW tricks of the trade will help you get your image files microsized. The following steps show how you can trim extra kilobytes off your GIFs so they'll download faster.

1 I started with a scan of a cartoon illustration. I brought the image into Photoshop, chose the Save For Web option, and then saved it as a 256-color GIF file. The total file size was 6.7K.



2 The most important part of reducing the size of a GIF file is to reduce the number of colors. Since the cartoon contained black lines and areas of flat color, and it had no gradients, I was able to reduce the number of colors from 256 to 16 without degrading the image. This slimmed the file down to 4.3K.



3 One trick to reducing the size of a GIF file is to get rid of any stray pixels in the areas of mostly solid color. I used the clone tool to get rid of some dark-green pixels scattered in the cartoon's background. When I resaved the file, its size dropped to 3.9K.



4 The final step was to apply the Lossy GIF feature, which is new in Photoshop 5.5. Lossy GIF takes advantage of the fact that GIF compresses better when pixel patterns repeat within an image. When you set the Save For Web Lossy GIF slider higher, Photoshop finds sequences of pixels that are similar and makes them identical. For this illustration, I set the lossy slider at 30. This reduced the file to a final size of 3.7K—45 percent smaller than the GIF file I began with.

Optimization on Autopilot

NEED TO COMPRESS A FOLDER FULL OF IMAGES, BUT YOU'RE approaching a deadline? This is when ImageReady 2.0—which is bundled with Photoshop 5.5—comes in handy. ImageReady's droplets are automatic image-optimization schemes that appear as desktop icons. Here's how to create and use a droplet from inside Photoshop.

1 Click on the wide button at the bottom of Photoshop's Tools window. This will open ImageReady. (If you have an image open in Photoshop, it will be imported into ImageReady.)

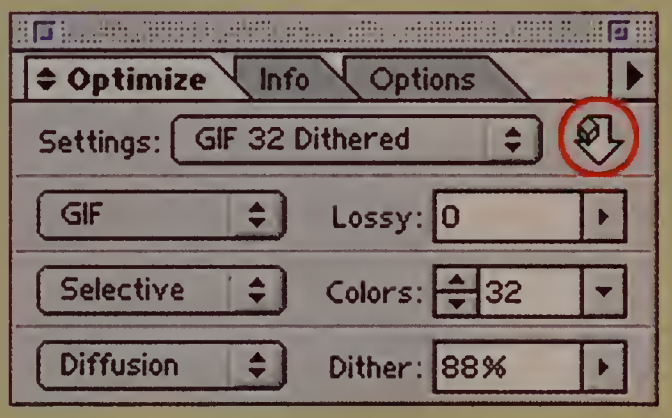
2 Select a compressed file format from ImageReady's Optimize window and adjust the compression settings to your liking.

3 Click on the droplet icon **(A)** in the upper-right corner of the Optimize window (the icon is the arrow pointing down). This will prompt you to name and save your new droplet. In the screen shot **(B)**, I've saved four different schemes as droplets in a folder.

4 To put your new droplet to work, drag and drop one or more image files (or folders) onto the icon. ImageReady will open, compress, and save new versions of the files.

Double-clicking on a droplet icon will bring up an ImageReady action menu that allows you to do further fine-tuning of your image-compression scheme.

A



B



Embracing Imperfection

DELIBERATE MISTAKES GIVE ART A NATURAL QUALITY

by Cathy Abes

We've all seen countless digital images sporting that telltale computer-generated look: too many smooth lines, flat colors, and uniform textures. An image that's too perfect can appear bland, soulless, devoid of character.

That's exactly what artist and illustrator Jeff Neumann aims to avoid. Coming from a collage-making background, Neumann brings an experimental, less-controlled approach to illustration. He views each project as a learning experience, what he calls "a process of making mistakes." And he treasures those mistakes, because they give his pieces a hand-done, natural appearance.

Going back and forth between Adobe Illustrator, Photoshop, and MetaCreations' Painter, Neumann builds up layered images and then destroys selected elements within those layers to simulate a rough, weathered look. He prefers to use Illustrator 6.0, because its paintbrush tool creates objects, which he can fill with gradations, whereas the same tool in later versions creates only lines.

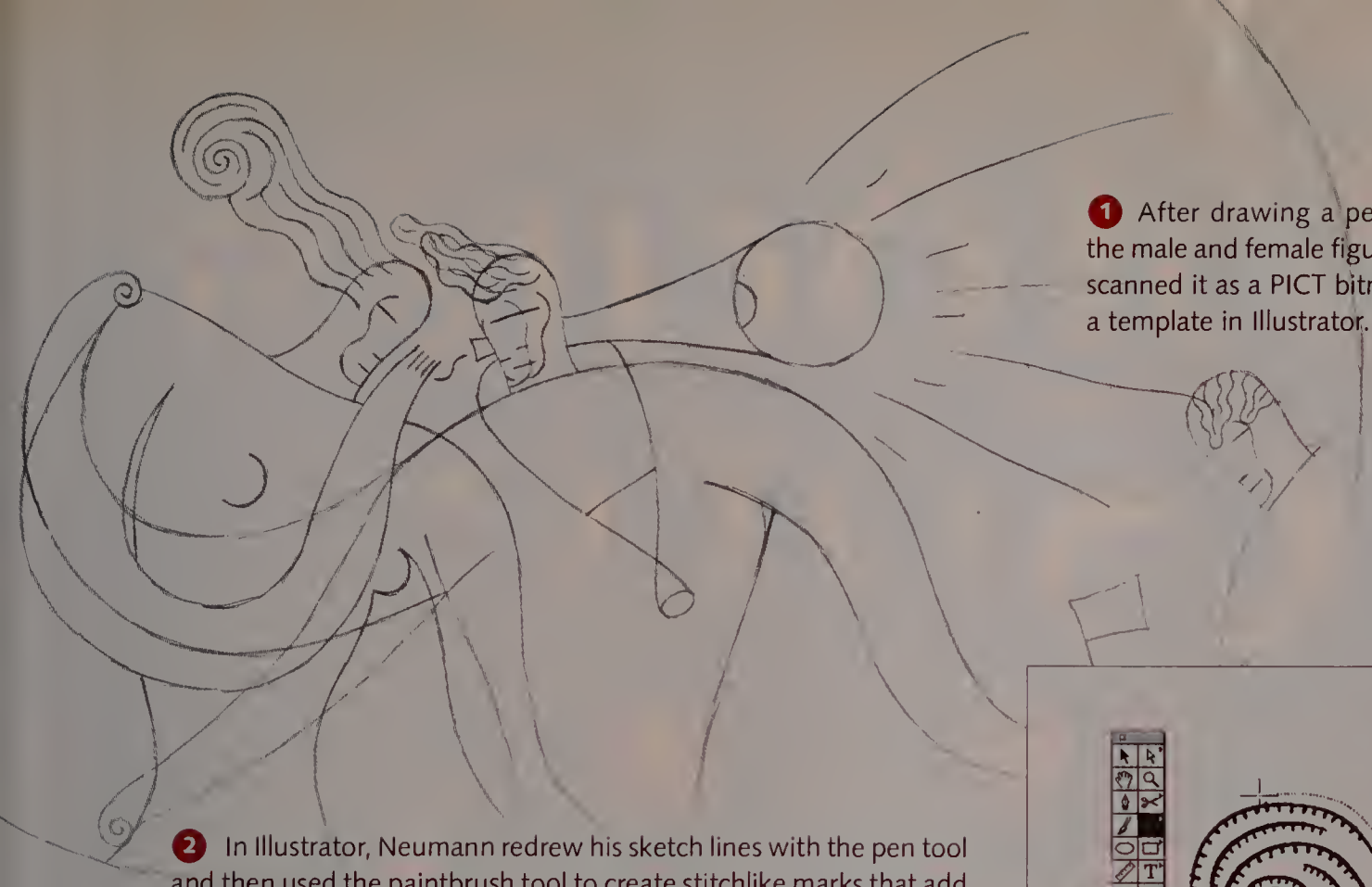
To illustrate an investigative article, for the *Anchorage Daily News*, about the illegal practice of physicians' selling their patients' confidential records to insurance companies, Neumann began with a hand-drawn pencil sketch. He refined the sketch and added flat color in Illustrator, created natural-media textures in Painter, and used Photoshop to composite the various layers.

For this illustration, Neumann relied on his usual arsenal of Illustrator 6.0, Painter 3.0, and Photoshop 5.0. His hardware includes a Power Computing PowerCenter Pro 210 and a Umax Astra 1200S scanner. m

CATHY ABES, author of *Photoshop F/X* (Ventana Press, 1994) and recently a senior editor at *Publish*, has been writing about graphics and publishing for more than ten years.

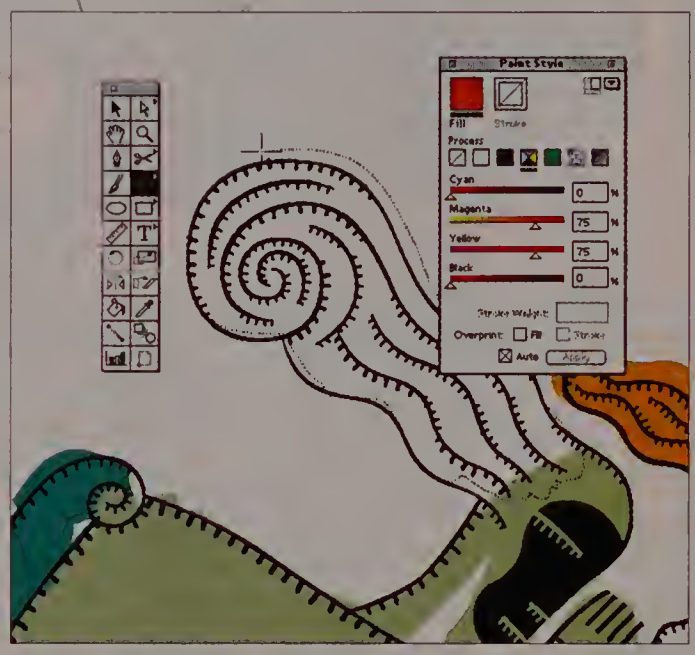


Constructive Destruction An artist with a background in collage, Jeff Neumann introduces imperfections into his images to avoid that computer-generated look.



1 After drawing a pencil sketch of the male and female figures, Neumann scanned it as a PICT bitmap for use as a template in Illustrator.

2 In Illustrator, Neumann redrew his sketch lines with the pen tool and then used the paintbrush tool to create stitchlike marks that add texture to the lines. Using the pencil tool, he created large shapes where he planned to add color for the background and the figures; then he filled them with flat color, creating an underpainting. After saving the image as an EPS file so he could open it in Photoshop, he saved it as a TIFF file for importing into Painter.

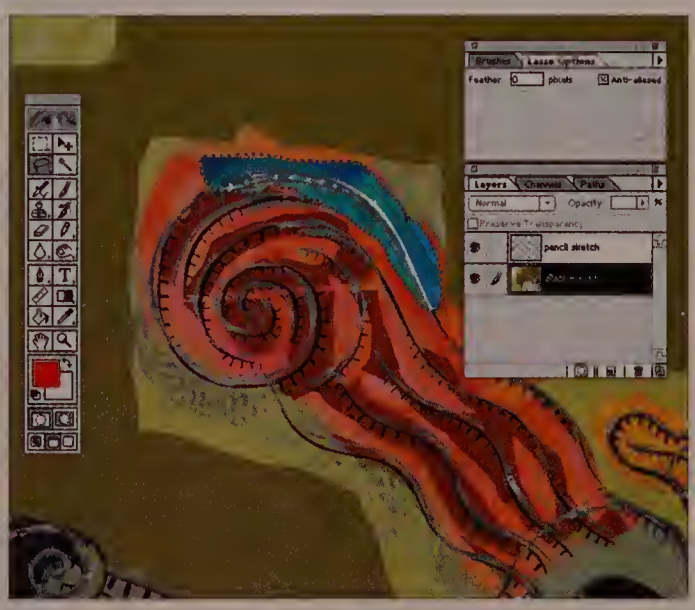




3 After bringing the TIFF file into Painter, Neumann used variants of the oil-brush tool to add texture and depth to the flat colors. For the woman's hair, he used a wet oil brush to pick up color from the underpainting and bleed it into the color he was brushing on top. A coarse-hair brush used on the dark-teal areas of the male figure gave it a hand-painted, textured quality.

4 Next, Neumann brought the TIFF Painter file into Photoshop as a layer and brought the EPS file in on top of that. In the Hue/Saturation dialog box, he slightly shifted all the values, making them less saturated, darker, and greener. He cut away parts of the EPS layer, revealing the Painter layer below it, to create more texture and depth. Then he brought in his original pencil sketch as another layer to give the image a more hand-drawn look.

Using the magic-wand tool at a low setting (about 5) allowed him to change some of the colors in the Painter layer, to create the illusion of chipped-off paint for a weathered look. For example, he picked up about half the blue tones in the female figure and filled them with yellow.



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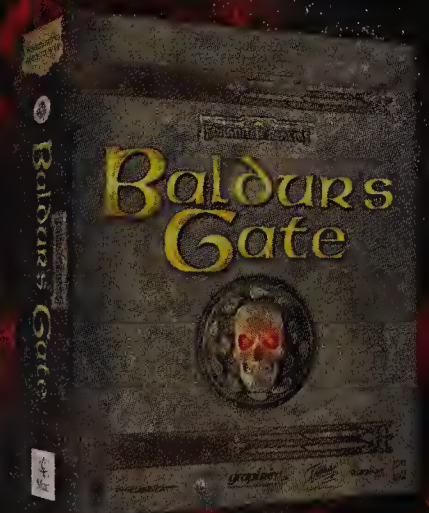
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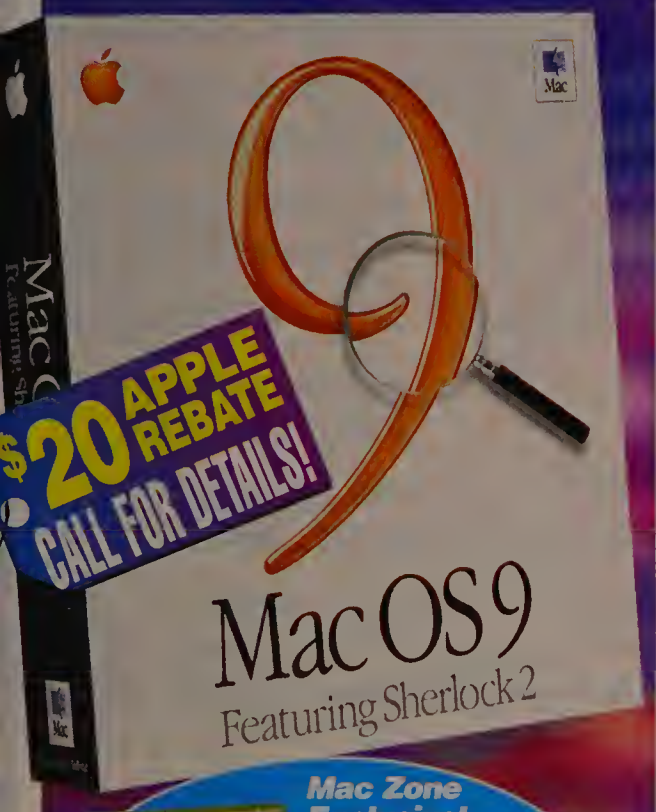
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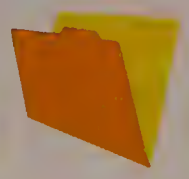


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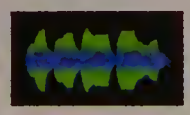
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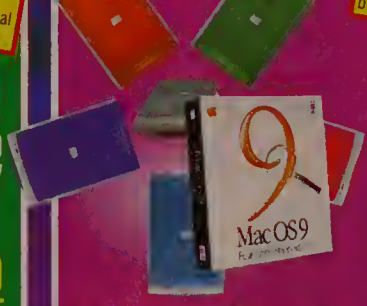
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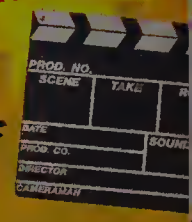
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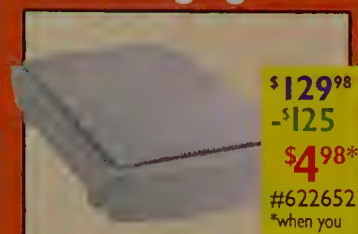
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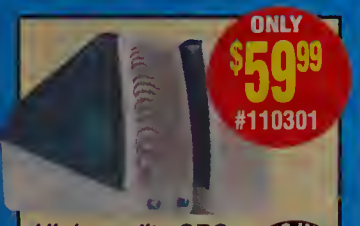
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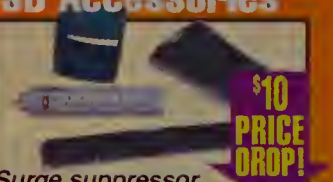
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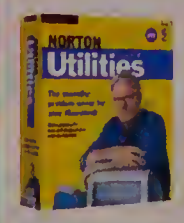


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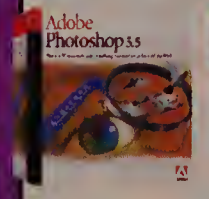
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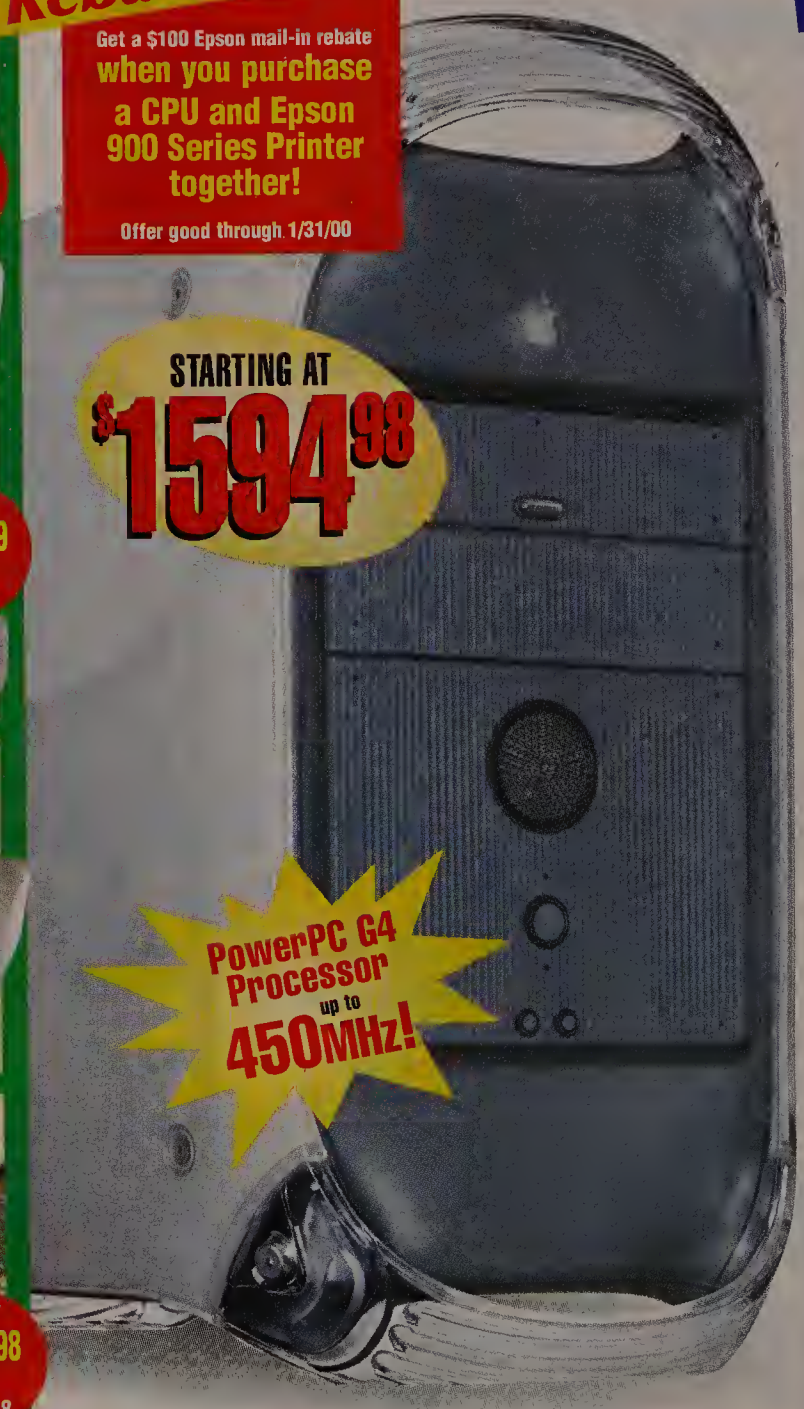
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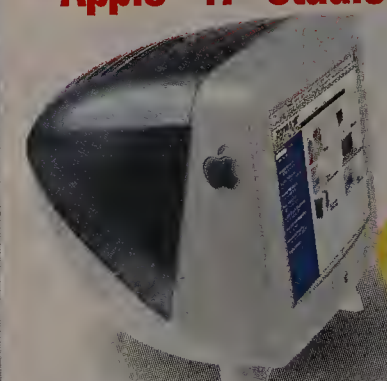
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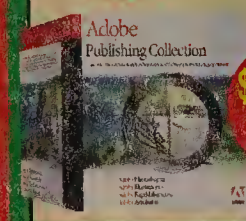
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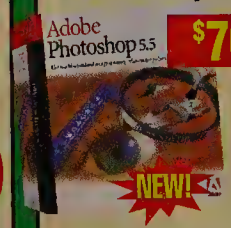
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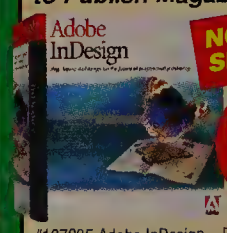
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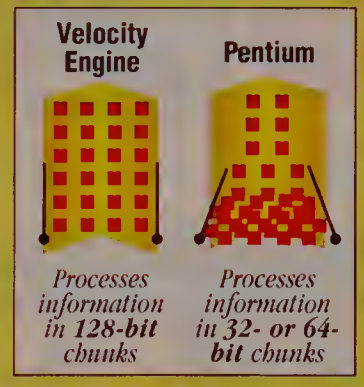
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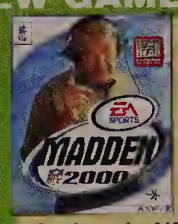
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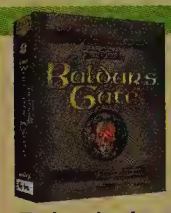
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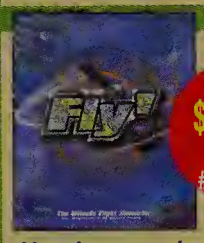
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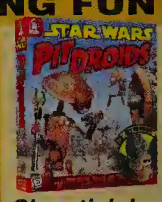
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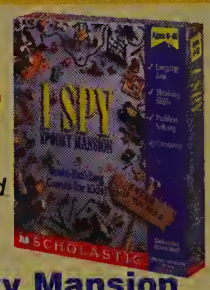


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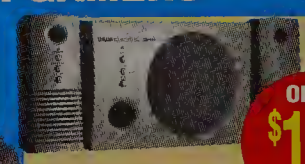
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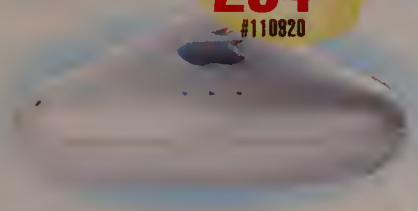


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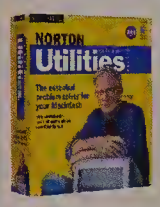


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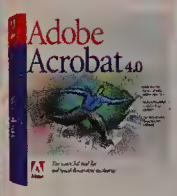


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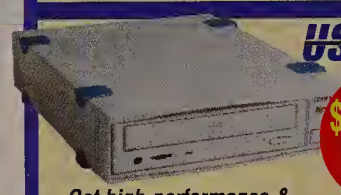
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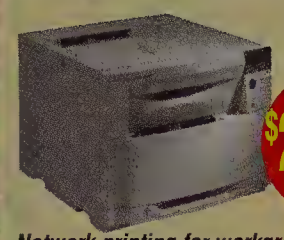
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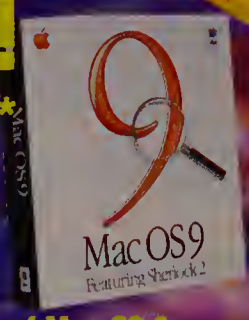
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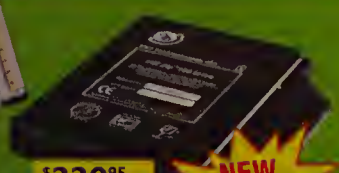
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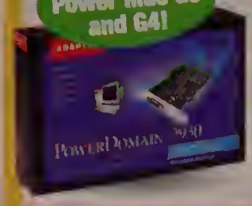


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Tektronix



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- Adobe PostScript Level 3
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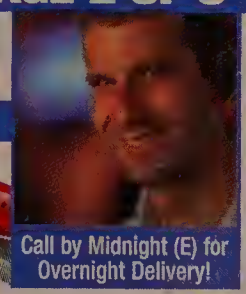
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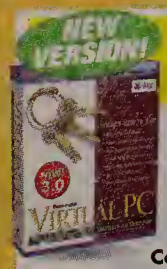
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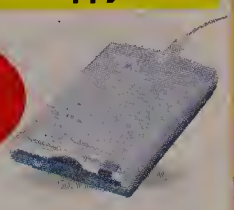
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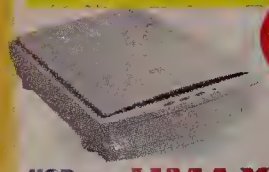
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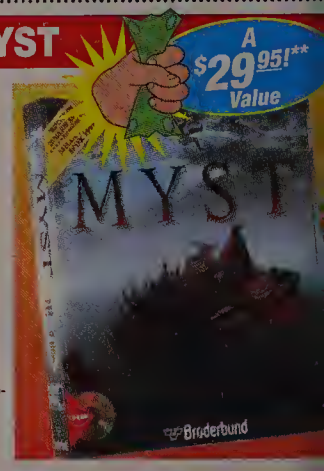
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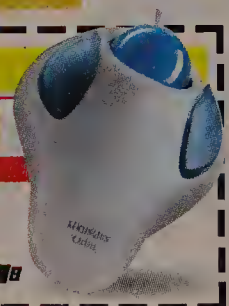
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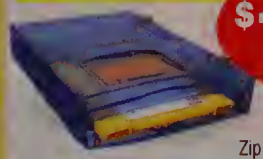
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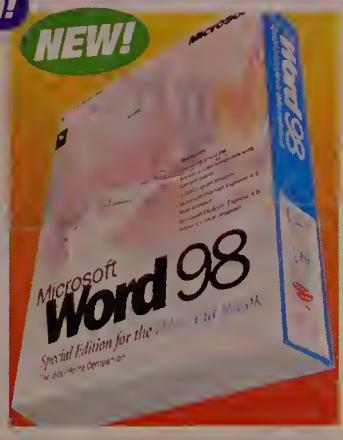
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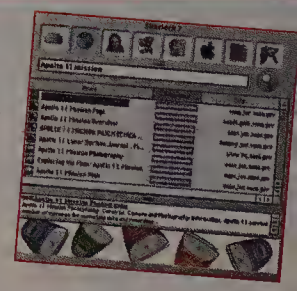
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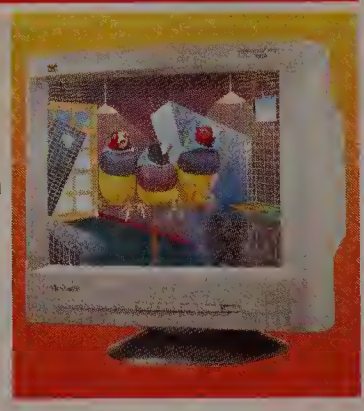
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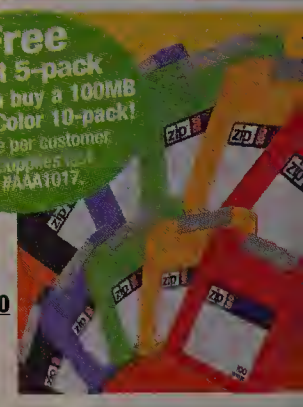


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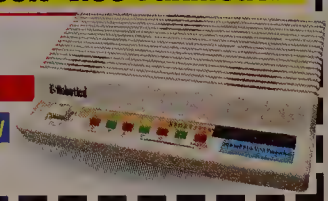
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- 14.1" Active-Matrix Display
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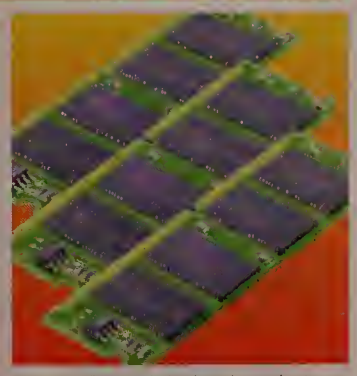
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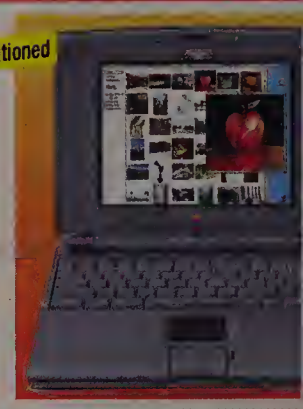
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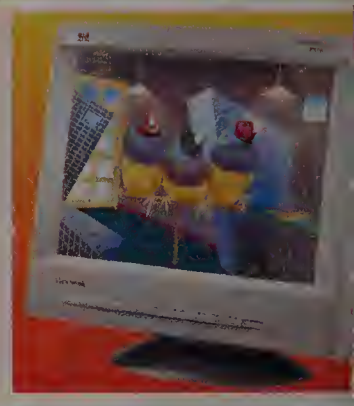


VIEWSONIC P810 21" MONITOR

ViewSonic on top

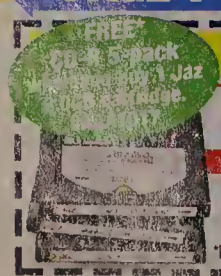
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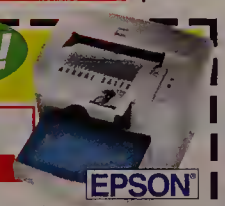
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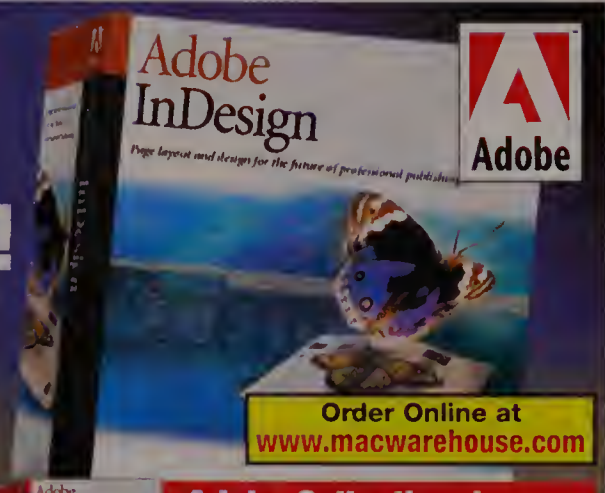
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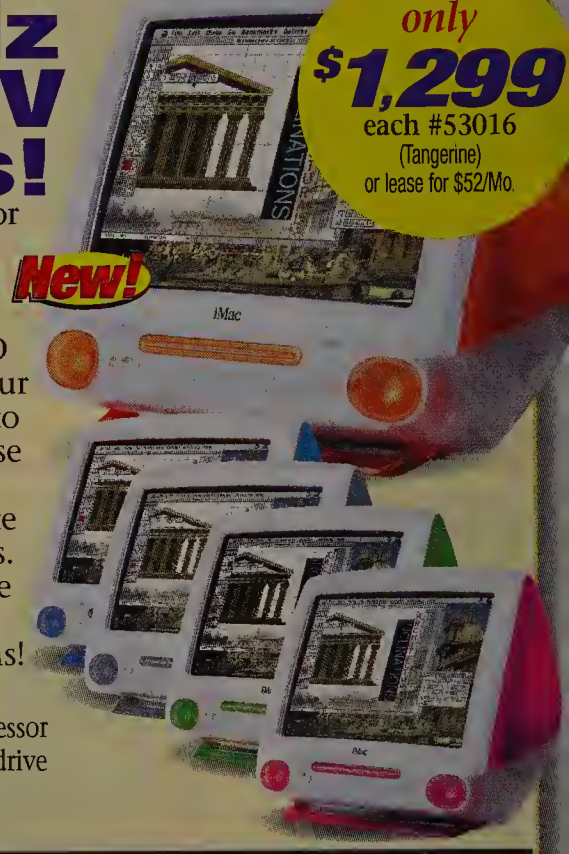
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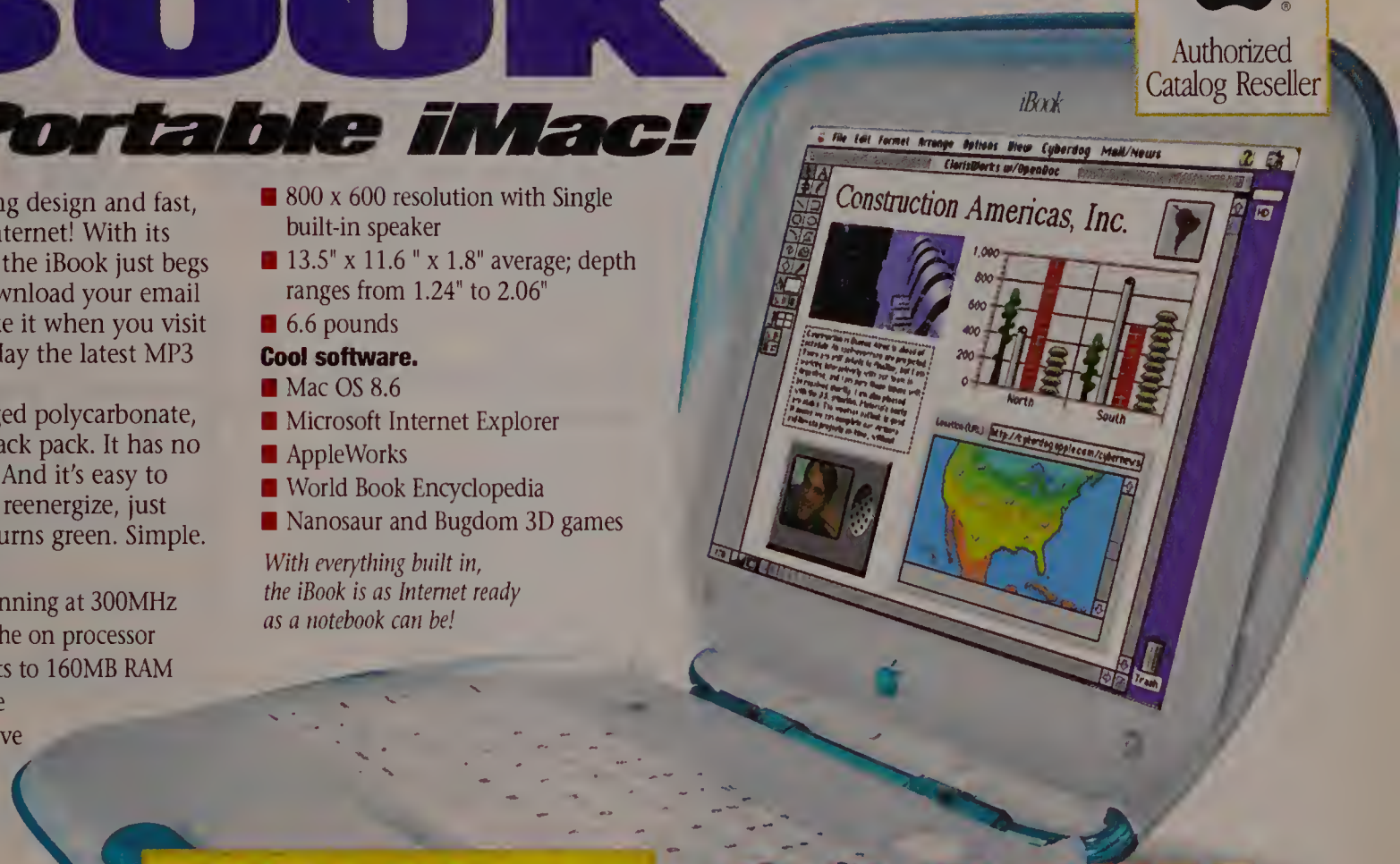
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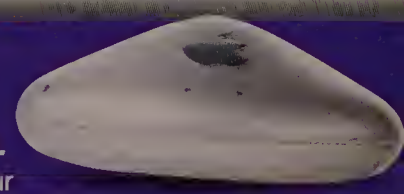
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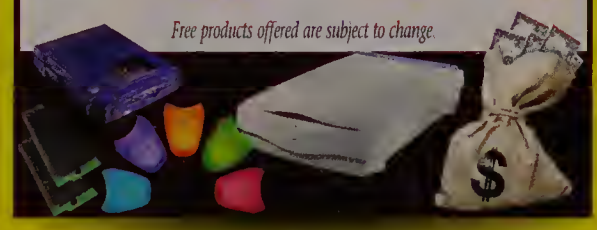
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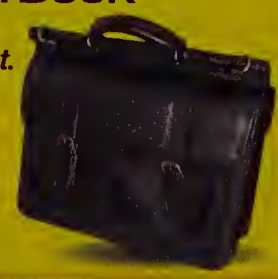
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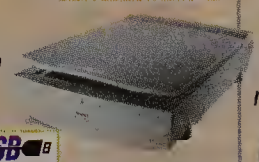
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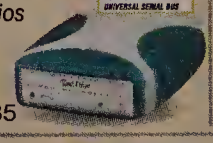
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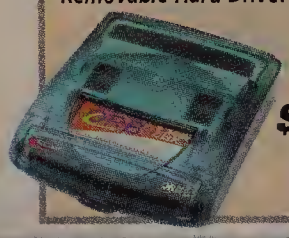
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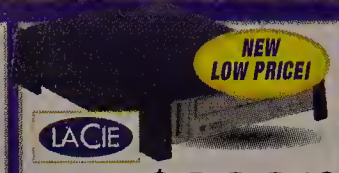
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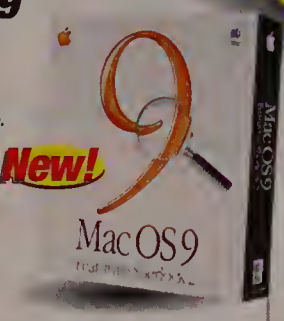
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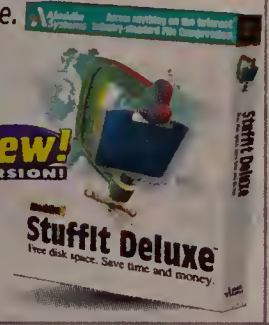
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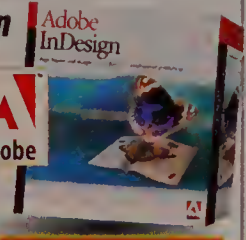
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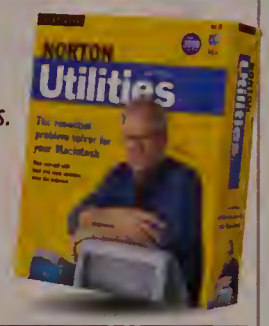
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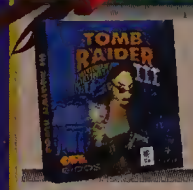
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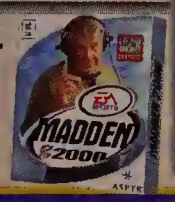


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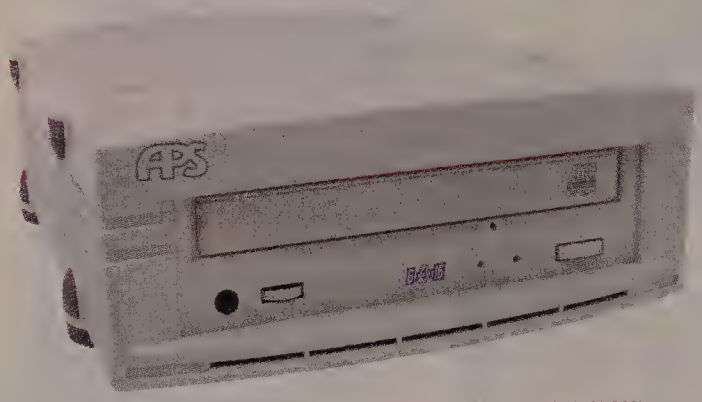
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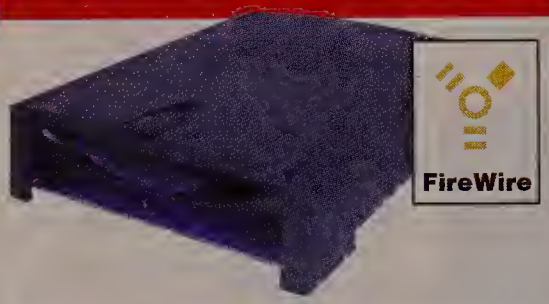
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APS ST 18GB LVD	7200	539.95	609.95
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APS I 36GB LVD	7200	1,099.95	1,169.95
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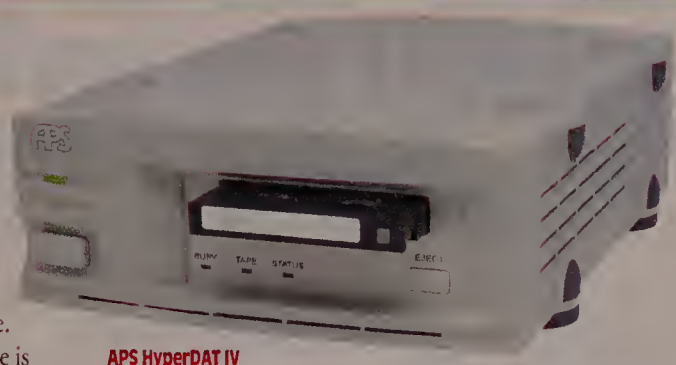
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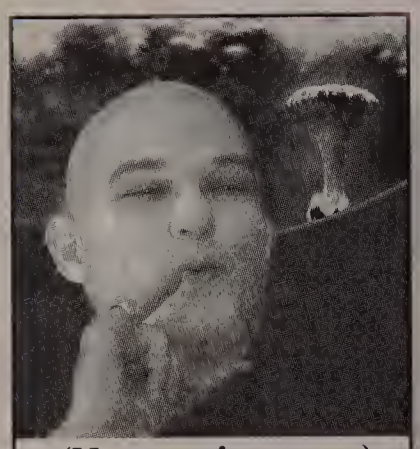
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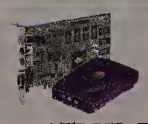
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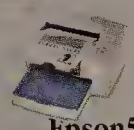
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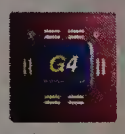
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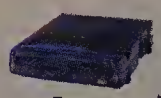
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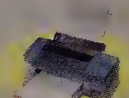
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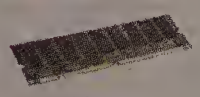
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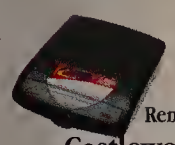
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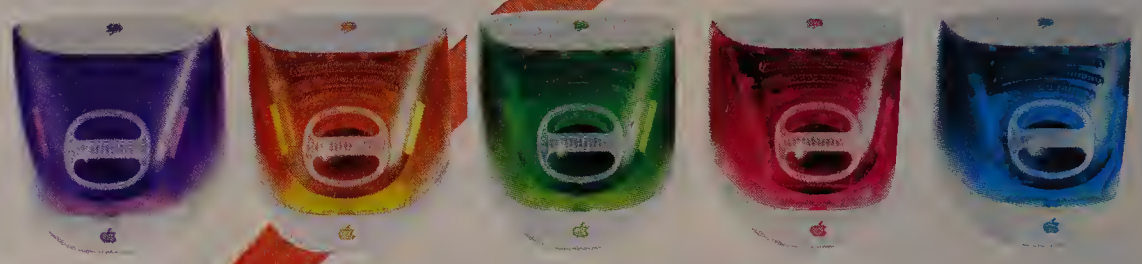
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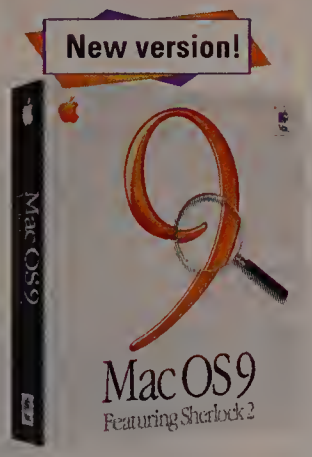
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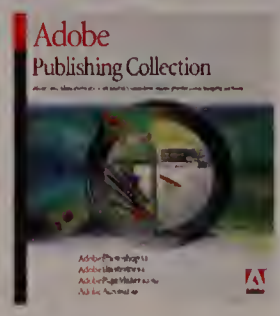
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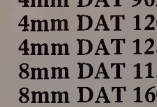
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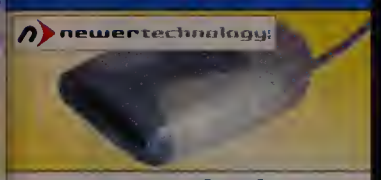
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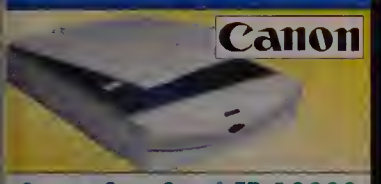
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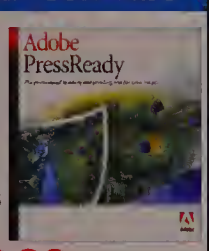


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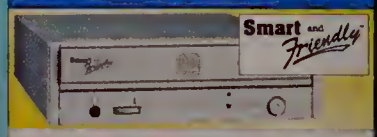
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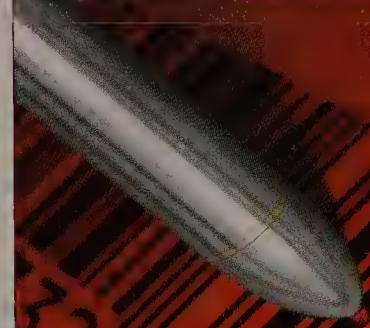
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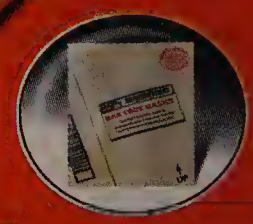
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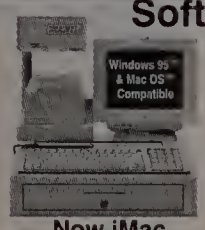
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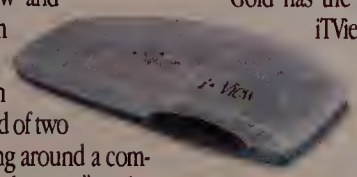
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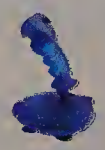
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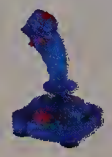
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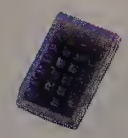
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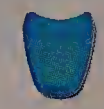
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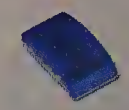
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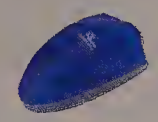
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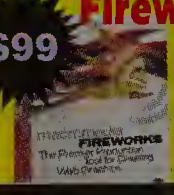
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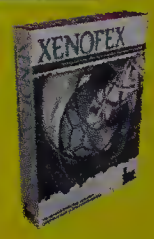
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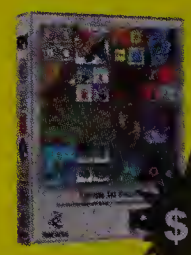


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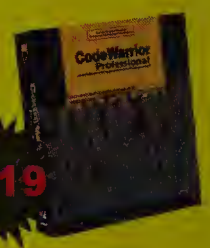
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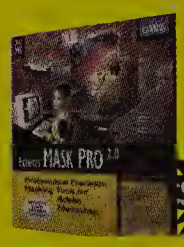
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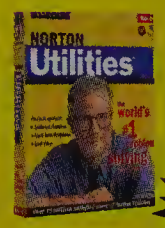
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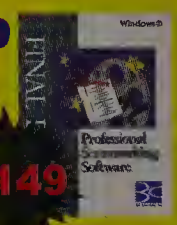
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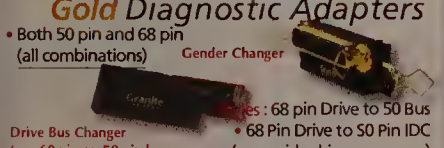
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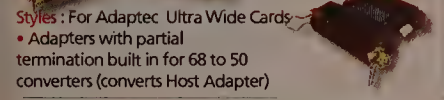
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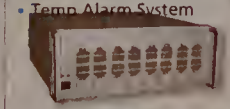
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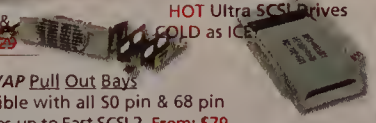
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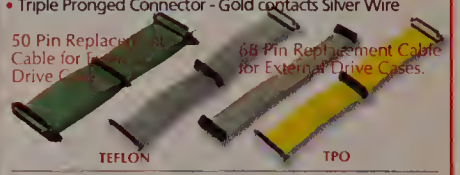
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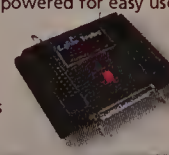
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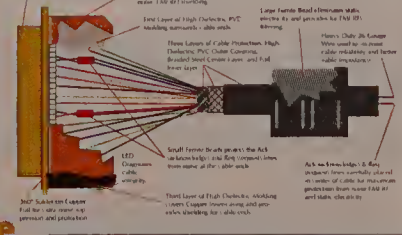
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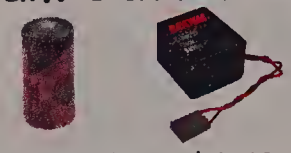
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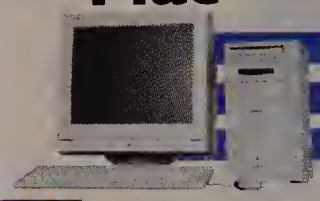
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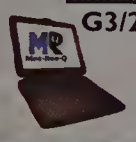
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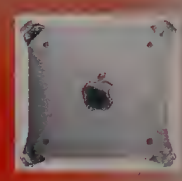
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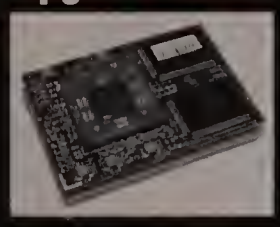
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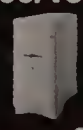
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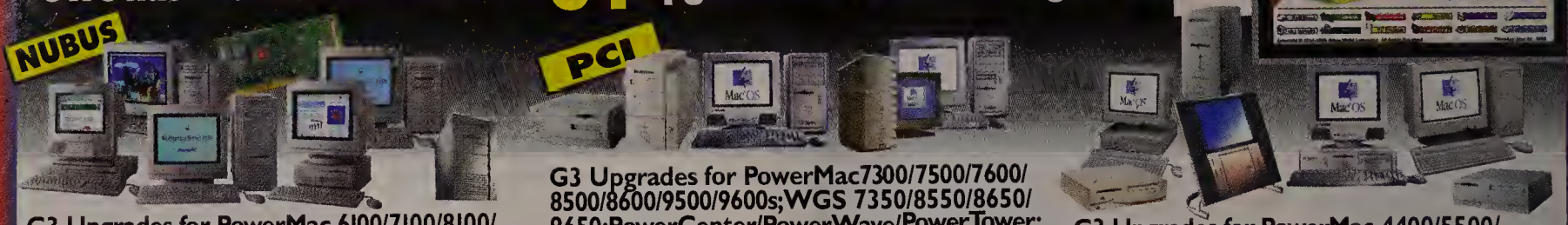
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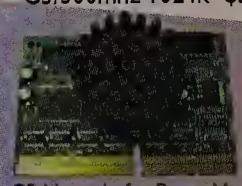
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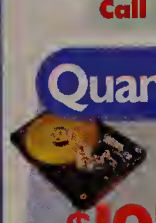
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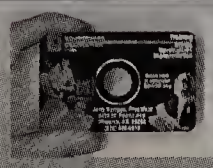
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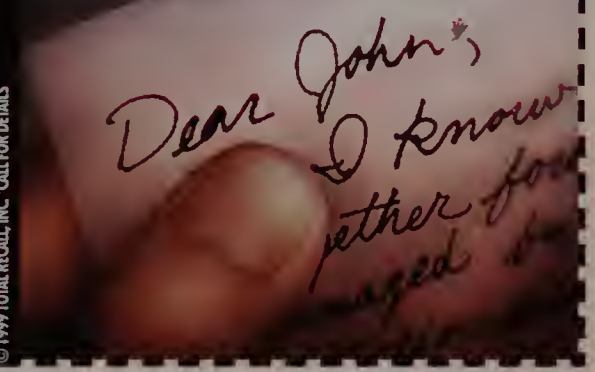
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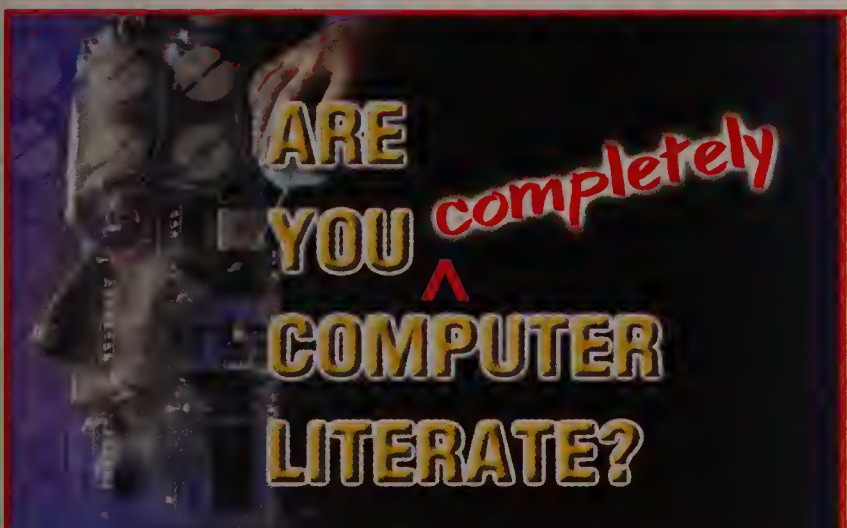
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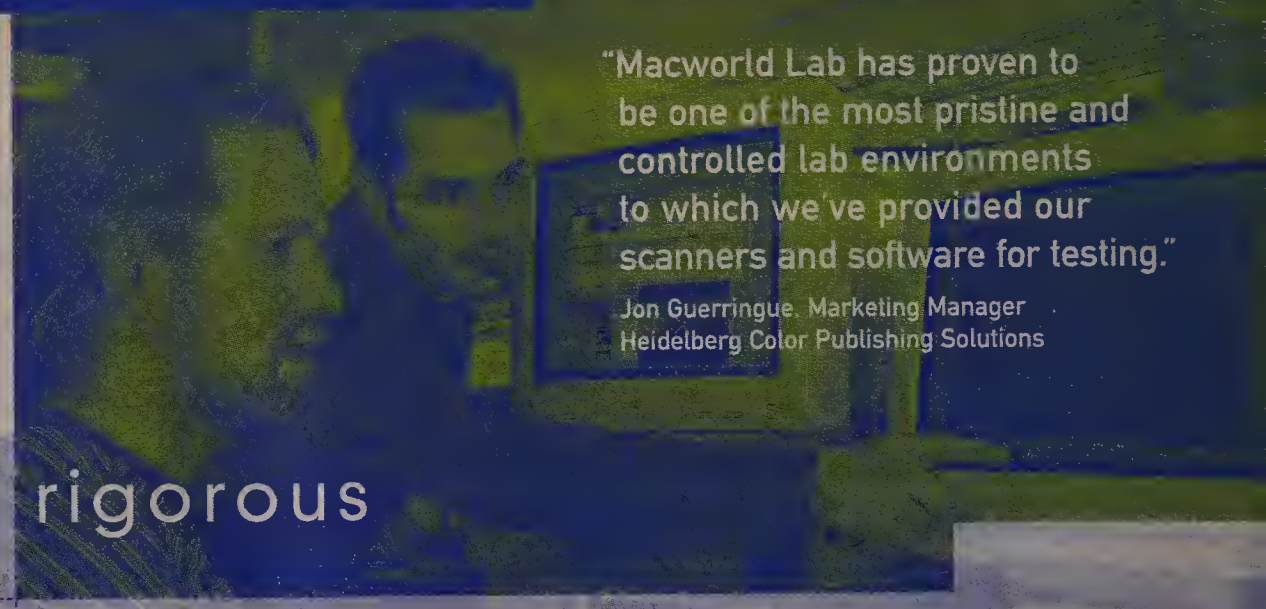
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The Desktop Critic

by David Pogue

Thinking More about Different

IF APPLE CAN REINVENT COMPUTERS, THINK WHAT IT COULD DO FOR DIAPERS

"THINK DIFFERENT," IF you ask me, is a great slogan. First of all, it's perfectly grammatical; Apple's telling you not how to think, but rather what to think about. Nobody complains about "Think big," "Think thin," or, as I saw on a skier's car recently, "Think snow." The oft proposed revision, "Think differently," makes no more sense than "Think bigly" or "Think snowly."

Furthermore, Apple actually lives by its motto. Frankly, I have my doubts that things actually go better with Coke, that quality really is job one at Ford, and that Pepperidge Farm does, in fact, remember. But Apple's designers truly do spend their days reconsidering computer design.

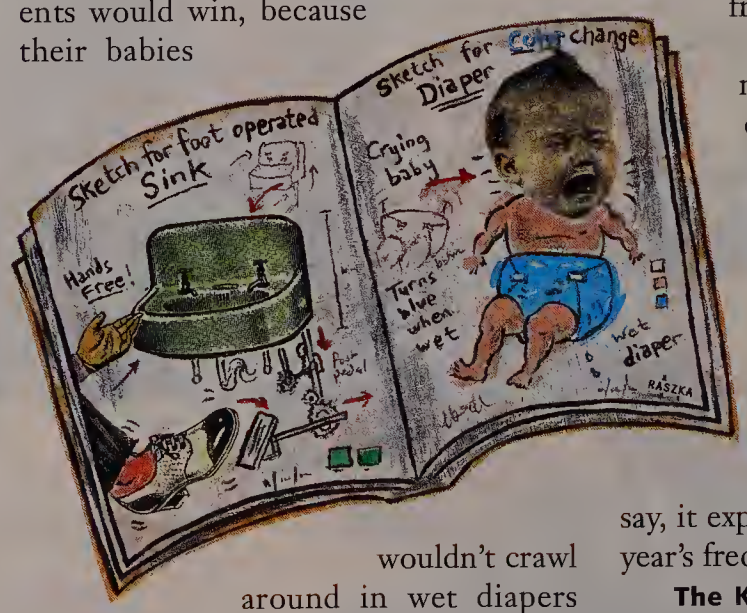
The iMac's cables, for example, connect on the side, where you can reach them, instead of on the back. The iBook wakes up when you open it—a brilliantly obvious behavior. And the ingenious drawbridgey side panel of the Power Macs should make other computer makers smack each others' foreheads.

Apple's inspired me. I've become obsessed with design, even the design of everyday things. Why are things the way they are—and why can't they be better? I can't help wondering what everyday products would be like if Steve Jobs and his chief designer, Jonathan Ive, could have a whack at them. If they ever quit their day jobs, here are some ideas to get them going.

The Clock Radio Why must we adjust the wake time by pressing a fast-forward button, praying that we release it at precisely the right instant? Every hotel guest in the world wastes three minutes nightly performing this ridiculous ritual. Would it be so difficult to add a number pad, like the number keys on a telephone, to the standard clock radio so that I could simply punch in *830 A* and be done with it? Touch-tone phones cost $15 at Wal-Mart; number-pad parts are cheap.

The Diaper New parents quickly master a peculiar skill: gauging whether a baby's diaper needs to be changed. You wind up pinching the white, gel-filled panels of the diaper in a queasy attempt to measure its change-worthiness.

So here's my brilliant idea: Why don't the manufacturers make diapers that turn blue when they're wet? I've seen toothbrushes and razor cartridges that change color when it's time to replace them—why not diapers? The parents would win, because their babies



wouldn't crawl around in wet diapers longer than necessary—and Lord knows, the diaper company would win, because parents would change such diapers more often.

The Keychain At high-tech companies these days, employees carry photo-ID cards that unlock doors automatically as they brush by. You can wear one on your belt, to keep your hands free. Phase One: Make this no-hassle system standard in homes, too, so you don't even have to put down the groceries.

Phase Two: Program these cards to store the passcodes for every door in our lives—front door, back door, car door. Physical keychains, and their accompanying inconvenience, disappear forever. (Ironically, Mac OS 9's Keychain control panel is exactly this idea. Now it just needs to leave the software world and enter the real one.)

Airline Web Sites At least four times in the last several years, I've driven all the way out to the airport, only to find that my flight has been canceled. The Jobs-Ive overhaul: Suppose that, when we bought a ticket, airlines let us indicate an e-mail address or a pager, fax, or phone number. Then, in the event of a delayed or canceled flight, we'd be notified automatically. Heck, we should even have the option of being notified when the plane's leaving *on schedule*—as a friendly reminder.

This wouldn't require hiring more staff—I'm talking about a completely automated system. It would take some programmer about a weekend to set up. The airline could make fabulous marketing hay: "We're the first airline that cares about your time." (Believe it or not, I once laid this idea on a board member of a major airline. Needless to say, it expired in his head faster than last year's frequent-flyer miles.)

The Kitchen Sink In hospitals, you step on a foot pedal to turn on the water. Why not at home? You could wash hands or dishes far more conveniently, prevent the spread of faucet-handle cold bugs, and save water because you'd avoid leaving the tap running. Anyone got Kohler's 800 number?

The Mouse Before they overhaul America's keychains and diapers, I've got a more pressing assignment for Jobs and Ive: Apple's modern mouse. You can't rest your hand on the stubby little thing, and it's hard to tell when you've got it straight. This is one case where Apple needs to think different—about thinking different. m

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DAVID POGUE (www.davidpogue.com) thinks bookly about his new *The iBook for Dummies* (IDG Books Worldwide, 1999).

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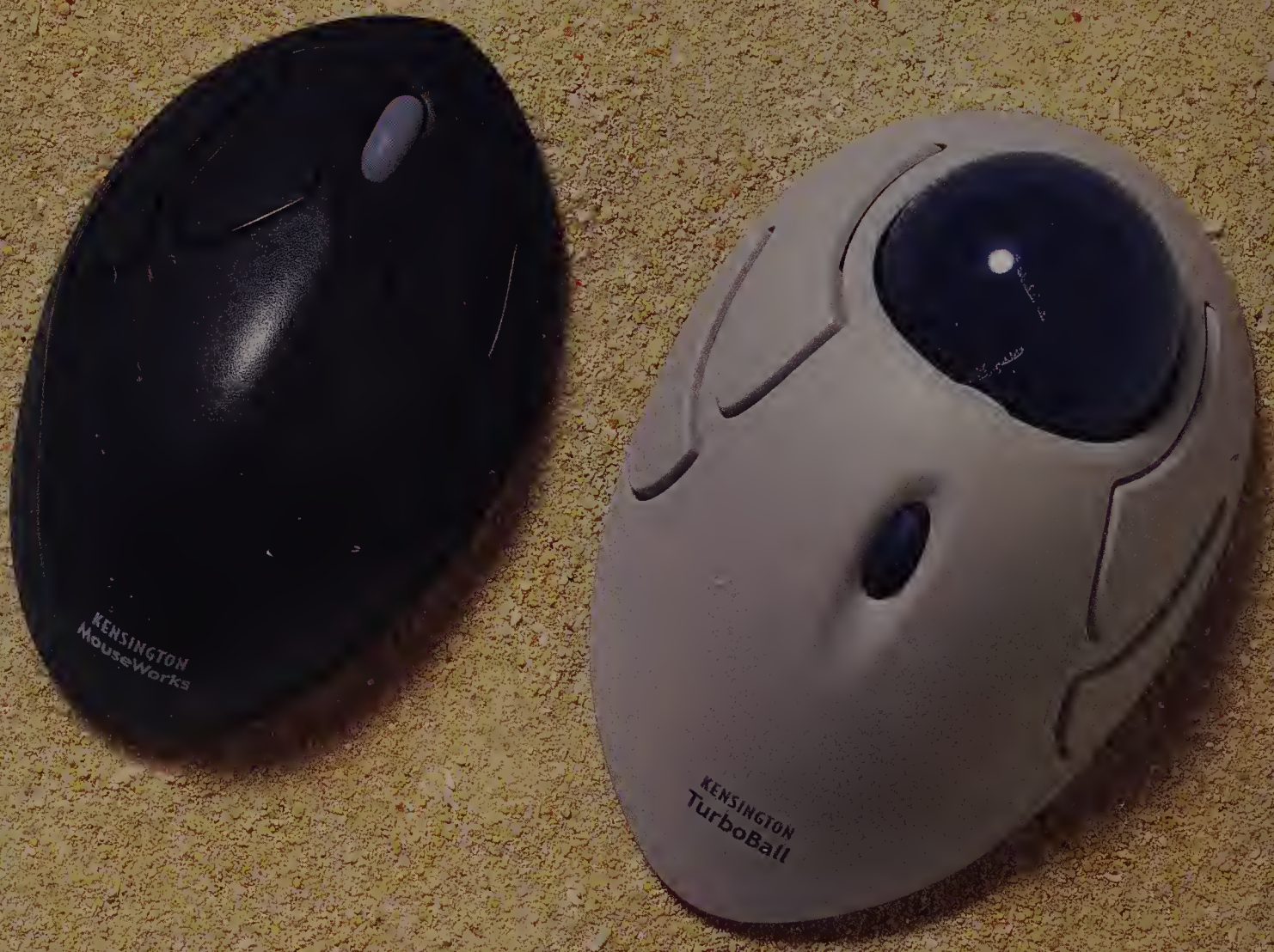
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